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Movement and Exploitation of Walleye, Sauger and Smallmouth Bass in the Missouri River System in South Dakota

Department of Game, Fish and Parks
Wildlife Division
Foss Building
Pierre, South Dakota 57501-3182

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INTRODUCTION

Walleye Stizostedion vitreum, sauger Stizostedion canadense, and smallmouth bass Micropterus dolomieui are popular sport fish in the Missouri River reservoirs of South Dakota. Various research and management activities concerning these species in the reservoirs have been initiated to contribute knowledge that will lead to improved management practices. An understanding of angler exploitation rates and fish movement patterns will enable fisheries biologists to better manage these important sport fisheries. The objectives of this study were to 1) determine angler exploitation rates; 2) determine the extent of movement; and 3) identify spawning sites of the forementioned species. This report is written in three sections. The first two sections are about tagging fish with dangler tags. The third section addresses tracking fish using sonic telemetry.

Movement and Exploitation of Walleye, Sauger and Smallmouth Bass in the Missouri River System in South Dakota

Statewide Fisheries Investigations

Completion Report

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PREFACE

Information collected during the period 1982 through 1992 is summarized in this report. Copies of this report and references to the data can be made with permission from the authors or Director of the Division of Wildlife, South Dakota Department of Game, Fish and Parks, Foss Building, Pierre, South Dakota, 57501.

The authors would like to acknowledge the efforts of numerous Game, Fish and Parks personnel who assisted with fish collection, tagging and tag return efforts; to the following individuals who assisted with the telemetry portion of this study, Dave Stout, Kent Sorenson, Jan Mord, Steve Lee, Derek Day, John Simpson, Michelle Scarborough, Gerald Wickstrom, John Lindgren, Brian Blackwell, Mike Clark, Phil Sensenbaugh, Brent VanderLey and Wayne Stastny; to the staff who administered and/or edited this report, Robert Hanten, Dennis Unkenholz, Doug Hansen, Art Talsma, and George Vandel. Special thanks to Kimberly Klinger and Sandi Knippling for their assistance in preparation of this manuscript.

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ABSTRACT

During 1986-1987 over 750 walleye and sauger were tagged in the portion of the Missouri River bounded by Gavins Point and Ft. Randall Dams. First year angler exploitation rates ranged from 16.7% to 31.4% for the various species. Movements exceeding 25 river miles were not uncommon for either tagged group. Over 220 smallmouth bass were tagged, in this same area, during 1986-1988. First year angler exploitation rates for smallmouth bass ranged from 7.4 to 15.7%. Smallmouth bass were generally recaptured at, or upstream, from their original tagging location.

From 1982-1991, 27,445 walleyes were tagged in the Missouri River reservoirs of South Dakota. First year angler exploitation rates ranged from 10.8% to 31% on Lake Oahe, from 5% to 31.6% on Lake Sharpe, and from 6.5% to 36.3% on Lake Francis Case. Walleye movements varied from far ranging and swimming the entire length of these reservoirs by walleyes to very little movement by certain individuals.

Sonic telemetry was determined to be a useful method of tracking walleye and sauger in a large reservoir system. A total of 95 walleye were implanted with transmitters from 1986 to 1990. These fish provided more location records than fish tagged by conventional tagging methods. Both methods, however, demonstrated that walleyes have a homing ability by returning to the same spawning area.

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WALLEYE, SAUGER AND SMALLMOUTH BASS, ABUNDANCE, MOVEMENT AND EXPLOITATION BETWEEN GAVINS POINT AND FT. RANDALL DAMS

STUDY AREA

The study area consisted of the Missouri River, bounded on the upstream end by Ft. Randall Dam and on the downstream end by Gavins Point Dam. The area includes 45 miles (72 km) of free flowing Missouri River, moving into Lewis and Clark Lake, a 28,500 acre (11,500 ha) Missouri River reservoir, impounded by Gavins Point Dam (Figure 1).

METHODS

Walleye and sauger were collected for tagging, throughout the study area during 1986 and 1987, by three methods: frame nets with 3/4 in (2 cm) bar mesh, fished overnight; electrofishing, using a boat mounted, pulsed DC system; or with 300 ft (91.5 m) multifiliment gillnets with 1-1/2 in (3.8 cm) or 2 in (5.1 cm) bar mesh, 6 ft deep (1.8 m), fished on the bottom (4.5 m maximum depth) and lifted every one to two hours. Smallmouth bass were collected during 1986-1988, utilizing the above mentioned frame netting and electrofishing equipment or by angling. All fish were tagged with a dangler disc tagging technique previously described in detail by Riis (1983) and Unkenholz et al. (1985). All fish, with the exception of a portion of the angler caught smallmouth bass, were released immediately after tagging. A sample of angler caught smallmouth bass were held for a minimum of 35 hours in raceways at the Gavins Point National Fish Hatchery, to evaluate delayed angling mortality prior to release.

RESULTS AND DISCUSSION

Collection and tagging efforts during 1986 and 1987 resulted in 751 walleye/sauger being tagged and released (Table 1). In 1986, collection efforts were expended primarily in the reservoir portion of the study area, resulting in over 65% of the walleye/sauger being tagged and released in that area (Table 2). In 1987, collection efforts were concentrated in the Ft. Randall Dam tailwaters and river reach down to Lewis and Clark Lake, and resulted in over 65% of the walleye/sauger being tagged and released in that portion of the study area (Table 2). Of the total number of walleye/sauger tagged in this area, over 98% were tagged in the immediate Ft. Randall tailwaters area. In 1986 sauger were the dominant species collected and tagged, accounting for over 60% of the total number of fish tagged. However, in 1987 walleye comprised over 86% of the total number of fish tagged (Table 1) and accounted for over 93% of the 296 walleye/sauger tagged in the immediate Ft. Randall Dam tailwaters area.

Efforts to collect and tag smallmouth bass, during 1986 through 1988, resulted in 221 fish being tagged and released (Table 3). All smallmouth bass tagged in 1988 (Table 3) were collected by anglers during a three-day fishing tournament. Because the collection site of those fish was unknown they were excluded from analysis of tag data for movement trends. Approximately 75% of the smallmouth bass tagged during 1986 and 1987 were collected in the reservoir portion of the study area.

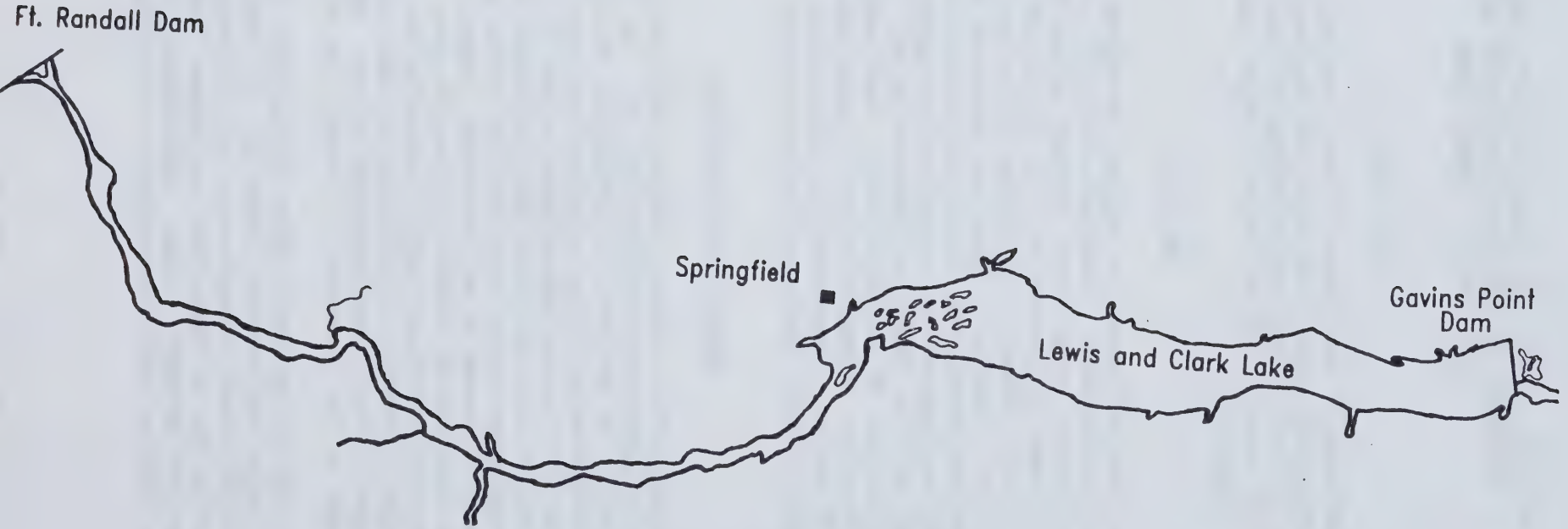

Figure 1.Missouri River and Lewis & Clark Lake from Ft. Randall Dam to Gavins Point Dam.

Table 1. Summary of data from walleye and sauger tagging studies on Lewis and Clark Lake, 1986 through 1991 recoveries.

Year Tagged	No. Tagged	Number and percentage (cummulative) of tagged fish reported by anglers by year*											
		1986		1987		1988		1989		1990		1991	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1986													
walleye	114	19	16.7	6	21.9	1	22.8	1	23.7	1	24.6	0	24.6
sauger	190	32	16.8	20	27.4	2	28.4	1	28.9	0	28.9	0	28.9
-Combined	304	51	16.8	26	25.3	3	25.3	2	27.0	1	27.3	0	27.3
1987													
1987													
walleye	388			122	31.4	13	34.8	3	35.6	1	35.8	0	35.8
sauger	59			13	22.0	1	23.7	0	23.7	1	25.4	0	25.4
-Combined	447			135	30.2	14	33.3	3	34.0	2	34.5	0	34.5

* First year returns are from date of tagging to end of that calender year; other years refer to subsequent calendar years.

Table 2. Number of walleye and sauger tagged, by area, during 1986 and 1987.
(RM = river mile)

Year Tagged	Lewis and Clark Lake RM811 - RM834	Missouri River RM834 - RM875	Ft. Randall Tail. RM875 - RM880
1986	No. fish tagged	No. fish tagged	No. fish tagged
walleye	75	29	10
sauger	127	58	5
Total	202	87	15
1987	No. fish tagged	No. fish tagged	No. fish tagged
walleye	107	4	277
sauger	44	1	14
Total	151	5	291

Table 3. Summary of data from smallmouth bass tagging studies on Lewis and Clark Lake, 1986 through 1991 recoveries.

Year Tagged	No. Tagged	Number and percentage (cummulative) of tagged fish reported by anglers by year*											
		1986		1987		1988		1989		1990		1991	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1986	51	8	15.7	3	21.6	2	25.5	0	25.5	0	25.5	0	25.5
1987	75			6	8.0	3	12.0	0	12.0	0	12.0	0	12.0
1988	95					7	7.4	3	10.5	3	10.5	3	10.5

* First year returns are from date of tagging to end of that calender year; other years refer to subsequent calander years.

Angler exploitation rates, from the time of tagging to the end of the first calendar year, during 1986 were almost identical (Table 1) for walleye and sauger, with sauger exploitation rates being slightly higher in subsequent calendar years. Exploitation rates for walleye/sauger tagged in 1987, through the end of the first calendar year, showed a much greater difference in exploitation rate for the two species. Angler exploitation rates were 31.4% for walleye, versus 22.0% for sauger (Table 1). Much of this increase can be attributed to the high exploitation (34.7%) of walleye tagged and released in the area immediately below Ft. Randall Dam. Table 4 presents recoveries, by location, within the study area. For walleye/sauger tagged in 1986, over 10% of the recaptures (Table 4) occurred below Gavins Point Dam, suggesting that, at least during certain times of the year, significant numbers of adult fish are moving through (and surviving) Gavins Point Dam. Table 5 presents data on distance of recapture location from the original tagging site. For walleye/sauger, tagged in 1986, over 50% of the fish recaptured were collected upstream from their original release location. For fish tagged in 1987, when a large number were tagged in the Ft. Randall tailwaters, over 60% were recaptured at their original release location. Movements exceeding 25 river miles, either upstream or downstream, were not uncommon for either tagged group of fish (Table 5).

Angler exploitation of smallmouth bass, from the time of tagging until the end of the first calendar year (Table 3), ranged from a low of 7.4% in 1988 to a high of 15.7% for 1986, approximately twice as high as both 1987 and 1988. All values were within ranges observed in other studies (Carlander 1977, Kempinger et al. 1982). Table 6 presents data on distance of recapture location from the original tagging site. In both years a majority of smallmouth bass were recaptured at, or upstream, from their original tagging location. Other studies (see Carlander 1977 for summary) have found that smallmouth bass have generally shown little movement in both lakes and streams, although travel distances of up to 205 miles have been observed.

Table 4. Number of walleye and sauger recaptured, by area, during 1986 through 1991. (RM = river mile)

Year Tagged	Gavins Point Tail. RM810 - below	Lewis and Clark Lake RM811 - RM834	Missouri River RM834 - RM875	Ft. Randall Tail. RM875 - RM880
1986	No. recaptured	No. recaptured	No. recaptured	No. recaptured
walleye	4	12	7	6
sauger	5	29	13	7
Total	9	41	20	13
1987	No. recaptured	No. recaptured	No. recaptured	No. recaptured
walleye	1	23	9	105
sauger	1	13	1	0
Total	2	36	10	105

Table 5. Distance (river miles) recaptured from original tagging location for walleye and sauger tagged between Gavins Point Dam and Ft. Randall Dam during 1986 or 1987.

	Downstream						1986			Upstream			
	25+	25-21	20-16	15-11	10-6	5-1	0	1-5	6-10	11-15	16-20	21-25	25+
walleye	1	0	0	2	0	4	4	3	4	0	3	1	7
sauger	3	1	3	0	0	8	15	8	6	1	0	0	9

	Downstream						1987			Upstream			
	25+	25-21	20-16	15-11	10-6	5-1	0	1-5	6-10	11-15	16-20	21-25	25+
walleye	4	1	1	3	5	8	95	8	2	0	1	0	10
sauger	2	0	0	4	0	5	2	2	0	0	0	0	0

Table 6. Distance (river miles) recaptured from original tagging location for smallmouth bass tagged between Gavins Point Dam and Ft. Randall Dam during 1986 or 1987.

	Downstream							Upstream					
	25+	25 - 21	20- 16	15 - 11	10 - 6	5 - 1	0	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	25+
1986	0	0	0	0	0	1	3	5	0	0	0	0	3
1987	0	0	0	1	0	1	3	1	1	0	0	0	2

WALLEYE MOVEMENTS AND EXPLOITATION IN LAKE'S OAHE, SHARPE, FRANCIS CASE AND LEWIS & CLARK

STUDY AREA

The study area consisted of the four mainstem Missouri River reservoirs in South Dakota. They extend from Lake Oahe in northcentral South Dakota downstream to Lewis and Clark Lake in southeastern South Dakota. Lake Oahe is the largest and deepest reservoir, followed in size by Lake Francis Case, Lake Sharpe, and Lewis and Clark Lake. Historical, biological, chemical and physical parameters have been discussed in previous North Central Reservoir Investigations and South Dakota Department of Game, Fish and Parks reports (June 1974; Selgeby and Jones 1974; Warnick 1987). Table 7 presents selected physical and management statistics on the four Missouri River reservoirs in South Dakota (Michaletz et al. 1986).

METHODS

Walleye were collected for tagging primarily from spawning runs, during 1982-1991, using three methods: frame nets with either 3/4 in (2 cm) or 1 in (2.5 cm) bar mesh, fished overnight; electrofishing, using a boat mounted, pulsed-DC system; or with 300 ft (91.5 m) multifilament gillnets with 1-1/2 in (3-8 cm) or 2 in (5.1 cm) bar mesh, 6 ft deep (1.8 m), fished on the bottom and lifted every one to two hours. All fish were tagged with a dangler disc tagging technique previously described in detail by Riis (1983) and Unkenholz et al. (1985). Smallmouth bass were collected as described in the previous section of this report. The primary method of tag recovery was through voluntary angler returns. Over the course of this study various tag return "incentive" programs were included, however each program was designed to give each returned tag an equal chance of being a "winner."

RESULTS AND DISCUSSION

Tables 8 through 10 present data on number of fish tagged, annual number recovered and annual cumulative percent returned, by reservoir. Tag recoveries for the first year represent the period from the time of tagging until the conclusion of that calendar year. Results for Lewis and Clark Lake are presented and discussed in the previous section of this report.

Lake Oahe

First year tag recoveries for walleye (Table 8), from Lake Oahe, ranged from a low of 8.3% in 1988 to a high of nearly 21% in 1982. Creel survey results over the ten year period from 1982-1991 (Fielder et al. 1992a), document that 1982 was also one of the highest years of walleye harvest on record. The degree of movement of tagged walleyes was variable and no strong relationship existed between distance moved and time tags were out. Approximately 75 to 80% of fish tagged in the Cheyenne, Moreau and Grand Rivers were caught within 20 miles of

Table 7. Physical characteristics at base of flood control and management information for the four Missouri River impoundments in South Dakota.

	Lake Oahe	Lake Sharpe	Lake Francis Case	Lake Lewis and Clark
Location	From Pierre, SD to Bismarck, ND	From Ft. Thompson to Pierre, SD	From Pickstown to Ft. Thompson, SD	From Yankton to Springfield, SD
Surface area (x 1,000 ha)	126.8	23.1	32.0	10.5
Depth (m) maximum	60.8	23.7	42.6	16.7
mean	19.2	9.5	15.2	5.0
Bottom	Sand, gravel, clay and shale	Sand, gravel shale and silt	Sand, gravel, shale and silt	Mud, silt, sand and gravel
Water source	Missouri River and tributaries	Missouri River and tributaries	Missouri River and tributaries	Missouri River and tributaries
Management classification	Cold, cool and warmwater permanent	Cold, cool and warmwater permanent	Cool and warm water permanent	Cool and warm water permanent

Table 8. Summary of data from walleye tagging studies on Lake Oahe, 1983 through 1991 recoveries.

Year Tagged	No. Tagged	Number and percentage (cummulative) of tagged walleye reported by anglers by year*																	
		1982		1983		1984		1985		1986		1987		1988		1989		1990		1991	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1982	8289	1732	20.9	425	26.0	192	28.3	99	29.5	55	30.2	23	30.5	17	30.6	10	30.8	14	31.0	2	31.0
1983	7352			1120	15.2	484	21.8	232	25.0	151	27.0	59	27.8	39	28.4	52	29.1	37	29.6	15	29.8
1988	300													25	8.3	20	15.0	11	19.3	4	20.7
1990	1193																	192	16.1	16	21.1
1991	400																			43	10.8

* First year returns are from date of tagging to end of that calender year; other years refer to subsequent calender year.

Table 9. Summary of data from walleye tagging studies on Lake Sharpe, 1983 through 1991 recoveries.

Year Tagged	No. Tagged	Number and percentage (cummulative) of tagged walleye reported by anglers by year*															
		1983		1984		1985		1986		1987		1988		1989		1990		1991	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1983	139	7	5.0	18	17.9	26	36.7	3	38.8	4	41.7	1	42.5	0	42.5	0	42.5	0	42.5
1984	1392			239	17.2	304	39.0	74	44.3	36	46.9	30	49.1	9	49.7	5	50.0	1	50.1
1985	1051					298	28.4	132	40.9	44	45.1	44	49.3	11	50.3	5	51.0	6	51.4
1988	57											18	31.6	4	38.6	1	40.4	2	43.9
1990	100															18	18.0	8	26.0
1991	100																	19	19.0

* First year returns are from date of tagging to end of that calender year; other years refer to subsequent calender year.

Table 10. Summary of data from walleye tagging studies on Lake Francis Case, 1983 through 1991 recoveries.

Year Tagged	No. Tagged	Number and percentage (cummulative) of tagged walleye reported by anglers by year*															
		1983		1984		1985		1986		1987		1988		1989		1990		1991	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1983	2539	665	26.2	303	38.1	213	46.5	92	50.1	25	51.1	12	51.6	9	51.9	2	52.0	1	52.1
1984	1708			375	22.0	255	36.9	92	42.3	13	43.0	15	43.9	8	44.4	4	44.6	4	44.8
1985	1178					428	36.3	138	48.0	27	50.3	18	51.9	5	52.3	7	52.9	1	53.0
1988	100											20	20.0	4	24.0	2	26.0	1	27.0
1990	597															66	11.1	48	19.1
1991	200																	13	6.5

* First year returns are from date of tagging to end of that calender year; other years refer to subsequent calender year.

the tagging location. More than half the tags returned came from within ten miles of tagging location. No relationship existed between distance moved and size or sex of fish. No relationship between the depth fish were recaptured and fish length existed. All tagged fish were adults and movement described may not represent movements of the entire walleye population.

Tagging studies have generally shown a wide dispersal of walleyes following spawning (Straudt and Eddy, 1939; Eschmeyer, 1950; Smith et al. 1952). Lake Oahe walleyes have completed spawning by mid-May in most years. Individuals that moved after spawning season became more widely dispersed by the July - September period. For walleyes that were recaptured more than 20 miles from their tagging location, a general trend existed whereby more walleyes made a downstream movement than an upstream movement (Table 11). The mouth of the Cheyenne River is approximately 20 miles from the tagging location and any movement to the mouth would be considered downstream. The Moreau River tagging location is nine miles from the mouth, and the Grand River tagging location is three miles from the mouth of their respective rivers.

A small percentage of walleyes were nomadic in nature and move great distances. Several tagged walleyes moved the length of the reservoir over two years. Many examples of extensive movement, over a short time period were documented during this study. One walleye was tagged in the Grand River and recaptured two months later near Bismarck, N.D. Another walleye was tagged on April 30, 1983 in the Grand River, recaptured at Whitlock's Bay in 1984, and recaptured again in 1985 at the Cheyenne River Spawning Station. Even though walleye can move great distances, evidence suggests a homing behavior during the spawning season. Homing described here refers to annual return of spawning walleyes to a particular spawning site. Tendency of walleyes to return to specific spawning areas in lakes and streams has been noted by several investigators. Crowe (1962), Olson and Scidmore (1962), and Forney (1963) have observed that walleyes tagged on spawning grounds tend to return to the same spawning area in successive years. Similar results were obtained in Lake Oahe (Tables 12-19). In 1983, 90% of the walleyes recaptured during the spawning run were recaptured at their release site. Of walleye tagged in 1982 and recaptured by netting in 1984, 85.4% were recaptured at their release site. Of walleye tagged in 1982 and 1983, recaptured in 1984, 89.5% were at their release site. Of walleye tagged in 1983 and recaptured in 1984, 91.3% were at their release site. Of total tags in 1985, 81.4% were recaptured at their release site. From the evidence available, it is concluded that the return of most walleyes to the same spawning site is likely a homing behavior. Tag returns suggest that walleyes intermingle in the open reservoir during post spawning periods and the population could be composed of discrete sub-populations identified with particular spawning areas.

Lake Sharpe

Tag recoveries, from Lake Sharpe (Table 9), ranged from a low of 5.0% in 1983 to a high of 31.6% in 1988, for first year returns. While the number of tagged fish in the 1988 sample was small, a first year return of 28.4% measured from a large group of walleye tagged in 1985. Creel survey results from that same year (Fielder et al. 1992b) suggest walleye harvest, however, was within the range observed over the period from 1983-1991. As observed in Lake Oahe, spawning

Table 11. Movement of walleye from tagging location in Lake Oahe, 1982 - 1984.

Tagging		Recoveries		More than 20 Miles		20 Miles or Less
Year	Location	Total Recaptures	Year	upstream (percent)	downstream (percent)	(percent)
1982	Cheyenne River	424	1982	39(10.6)	36(9.8)	293(80.8)
		121	1983	23(19.0)	26(21.5)	72(59.5)
		79	1984	14(17.7)	27(34.2)	38(48.1)
1983	Cheyenne River	233	1983	30(12.9)	57(24.5)	146(62.7)
		146	1984	34(23.3)	33(22.6)	79(48.1)
1982	Moreau River	418	1982	28(7.4)	67(17.7)	283(74.8)
		112	1983	16(14.3)	16(14.3)	80(71.8)
		34	1984	3(8.8)	16(47.1)	15(44.1)
1983	Moreau River	170	1983	4(2.4)	32(18.9)	133(78.7)
		51	1984	9(18.4)	15(30.6)	25(51.0)
1982	Grand River	872	1982	44(5.2)	131(15.6)	661(78.7)
		187	1983	22(11.8)	39(20.9)	126(67.4)
		75	1984	10(13.9)	18(25.0)	44(61.1)
1983	Grand River	680	1983	18(3.1)	123(20.9)	449(76.1)
		268	1984	37(14.5)	67(26.2)	152(59.4)
1982	Whitlocks Bay	18	1982	3(17.7)	5(29.4)	9(52.9)
		5	1983	2(40.0)	0	3(60.0)
		4	1984	1(25.0)	1(25.0)	2 50.0)
1983	Lower Oahe	37	1983	1(2.7)		35(97.2)
		19	1984	3(15.8)		16(84.2)

Table 12. Walleyes recaptured during spring spawning runs and homing behavior exhibited during subsequent years on Lake Oahe, 1982-1985.

Tagging and Release Site	Year Tagged	Year Recaptured	Number recaptured at Release Point	Number Recaptured From Other Release Locations
Cheyenne River	1982	1983	194	4
		1984	49	1
		1985	26	3
	1983	1984	66	4
		1985	40	3
Moreau River	1982	1983	22	24
		1984	12	4
		1985	21	6
	1983	1984	16	17
		1985	20	26
Grand River	1982	1983	143	12
		1984	68	15
		1985	27	4
	1983	1984	225	6
		1985	72	5
All Sites	1982	1983	359	40
		1984	129	22
		1985	74	13
	1983	1984	306	29
		1985	132	34

Table 13. Tag recaptures during spring 1986 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year		
		1982	1983	1984
Grand	Grand	10 (91%)	38 (95%)	
	Moreau	1 (9%)	2 (5%)	
51	Cheyenne			
Returns	Whitlocks Bay			
	Lower Oahe			
Moreau	Grand	4 (40%)	8 (30%)	
	Moreau	5 (50%)	17 (63%)	2 (100%)
39	Cheyenne	1 (10%)	2 (7%)	
Returns	Whitlocks Bay			
	Lower Oahe			
Cheyenne	Grand			1 (100%)
	Moreau			
90	Cheyenne	25 (100%)	63 (98%)	
Returns	Whitlocks Bay			
	Lower Oahe		1 (2%)	
Lower Oahe	Grand			
Okobojo	Moreau			
	Cheyenne	1 (100%)	4 (44%)	
10	Whitlocks Bay			
Returns	Lower Oahe		5 (56%)	

Table 14. Tag recaptures during spring 1987 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year		
		1982	1983	1984
Grand	Grand	3 (100%)	8 (100%)	
	Moreau			
11	Cheyenne			
Returns	Whitlocks Bay			
	Lower Oahe			
Moreau	Grand	1 (25%)	2 (29%)	
	Moreau	3 (75%)	4 (57%)	
11	Cheyenne		1 (14%)	
Returns	Whitlocks Bay			
	Lower Oahe			
Cheyenne	Grand			
	Moreau			
20	Cheyenne	4 (100%)	16 (100%)	
Returns	Whitlocks Bay			
	Lower Oahe			
Lower Oahe	Grand			
Okobojo	Moreau			
	Cheyenne		1 (33%)	
3	Whitlocks Bay			
Returns	Lower Oahe		2 (67%)	

Table 15. Tag recaptures during spring 1988 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year		
		1982	1983	1984
Grand	Grand	4 (100%)	12 (100%)	
	Moreau			
16	Whitlocks Bay			
Returns	Cheyenne			
	Okobojo			
Moreau	Grand		1 (50%)	
	Moreau	2 (10%)		
4	Whitlocks Bay			
Returns	Cheyenne		1 (50%)	
	Okobojo			
Cheyenne	Grand			
	Moreau	1 (14%)		
22	Whitlocks Bay			
Returns	Cheyenne	6 (80%)	15 (100%)	
Okobojo	Grand			
	Moreau			
1	Whitlocks			
Return	Cheyenne			
	Okobojo		1 (100%)	

Table 16. Tag recaptures during spring 1989 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year		
		1982	1983	1988
Grand	Grand		7 (100%)	
	Moreau			1 (100%)
	Cheyenne			
Moreau	Grand			
	Moreau			10 (100%)
	Cheyenne			
Cheyenne	Grand			
	Moreau		1 (20%)	
	Cheyenne	2 (100%)	4 (80%)	1 (10%)

Table 17. Tag recaptures during spring 1990 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year		
		1982	1983	1988
Grand	Grand	1 (50%)	3 (100%)	
	Moreau	1 (50%)		1 (100%)
	Cheyenne			
Moreau	Grand			
	Moreau			
	Cheyenne			
Cheyenne	Grand			
	Moreau			
	Cheyenne	2 (100%)	7 (100%)	1 (100%)

Table 18. Tag recaptures during spring 1991 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year			
		1982	1983	1988	1990
Grand	Grand	1 (100%)	4 (100%)		12 (48%)
	Moreau				3 (12%)
	Cheyenne				5 (20%)
	Tournament (Mobridge)				5 (20%)
Moreau	Grand				2 (6%)
	Moreau			2 (100%)	22 (71%)
	Cheyenne				1 (3%)
	Tournament (Mobridge)				6 (19%)
Cheyenne	Grand				
	Moreau				
	Cheyenne		1 (100%)		4 (100%)

Table 19. Tag recaptures during spring 1992 walleye spawning run, Lake Oahe.

Recapture Location	Tagging Location	Tagging Year				
		1982	1983	1988	1990	1991
Grand	Grand				9 (56%)	5 (56%)
	Moreau			1 (100%)	4 (25%)	1 (11%)
	Cheyenne					1 (11%)
	Tournament (Mobridge)				3 (19%)	2 (22%)
Moreau	Grand				2 (11%)	
	Moreau				13 (72%)	6 (100%)
	Cheyenne				2 (11%)	
	Tournament (Mobridge)				1 (6%)	
Cheyenne	Grand					
	Moreau					
	Cheyenne	2 (100%)	1 (100%)	2 (100%)	12 (100%)	4 (100%)

walleye in Lake Sharpe generally returned to the same spawning area at which they were tagged. In the fall of the year, there is usually a large movement of walleye into the upper portion of the reservoir (Elrod et. al. 1987). These fish generally disperse throughout the reservoir in the late spring and summer. Similar observations were made from Lake Sharpe when tag returns were analyzed by date and location of recapture.

Lake Francis Case

First year tag recoveries (Table 10), from Lake Francis Case, ranged from a low of 6.5% in 1991 to a high of 36.3% in 1985. While creel survey data is unavailable from LFC for 1985, walleye harvest in 1984 was over 240,000 fish (Stone and Wickstrom 1992), with exploitation measured at 22.0%. Observations of the 1985 fishery, along with annual population survey data, would suggest that the 1985 fishery (in terms of harvest) was of similar magnitude to the 1984 fishery. Walleye abundance, as measured in the fall of 1985 by gill nets, was half of that measured in 1984 and a third of the value observed in 1983 (Michaletz et al. 1986). First year recoveries indicated a general dispersal of fish throughout the reservoir, however a high percentage of fish were recaptured within 20 miles of their tagging location. Movements down the entire reservoir were common, with first year recoveries exceeding 10% (of the total) for fish moving more than 50 river miles away from their tagging location.

General Observations

Cumulative returns, for tagged groups at large for more than three years, ranged from a low of 20.7% for the 1988 tagged group on Lake Oahe (Table 8) to a high of 53.0% for the 1985 tagged group on LFC (Table 10). Cumulative returns on Lakes Sharpe and Francis Case routinely exceeded 40% for groups at-large more than three years, while on Lake Oahe 31.0% was the highest commulative return measured. The size of Lake Oahe may have contributed to the differences with less fishing pressure per hectare than Sharpe or Francis Case.

Tag return data, from this study, also documents potential walleye life expectancies in these reservoirs. Assuming that the minimum age at the time of tagging was Age 2 (due to pre-established minimum tagging lengths), maximum ages, at the time of recapture, documented in this study, would have ranged from 9 years on Lake Sharpe to 16 years on Lake Oahe. Table 20 presents several years of data on angler exploitation of tagged walleye by 50 mm length groups.

A change in walleye sport fishing regulations was initiated in 1990 that reduced the daily creel limit from 6 to 4 fish and implemented a three month (April - June) 14 inch minimum size limit, on these three reservoirs. As was expected by regulation design, harvest, and in turn exploitation, was most affected on Lake Francis Case. First year exploitation rates (Table 10) fell to the lowest levels observed over the course of this study. First year tag return rates on Lakes Oahe and Sharpe remained within the ranges observed prior to the regulation changes. Regulation changes were expected to have less of an impact on Lakes Oahe and Sharpe.

Table 20. Incremental first year exploitation rates by 50 mm length groups for walleye tagged in 1982, 1985 and 1990.

LAKE OAHE, 1982

	CHEYENNE			MOREAU			GRAND		
LENGTH mm	NUMBER TAGGED	NUMBER CAUGHT	%	NUMBER TAGGED	NUMBER CAUGHT	%	NUMBER TAGGED	NUMBER CAUGHT	%
≤350	0	0	-	16	1	6.0	40	6	15.0
351-400	10	0	-	205	46	22.4	411	96	23.4
401-450	128	19	14.8	582	160	27.5	879	267	30.0
451-500	497	63	12.7	331	123	37.2	537	159	29.6
501-550	665	102	15.3	267	58	21.7	335	87	26.0
551-600	266	45	16.9	115	27	23.5	109	27	24.8
601-650	80	16	20.0	39	13	33.0	41	12	29.3
651-700	19	3	15.8	11	3	27.3	4	0	-
701-750	6	0	-	0	0	-	1	0	-
≥751	1	0	-	0	0	-	-	-	-
TOTAL	1672	248	14.8	1566	431	27.5	2357	654	27.7

Table 20 continued...

LAKE OAHE, 1990

LENGTH	CHEYENNE NUMBER TAGGED	CHEYENNE NUMBER CAUGHT	CHEYENNE %	GRAND NUMBER TAGGED	GRAND NUMBER CAUGHT	GRAND %	MOREAU NUMBER TAGGED	MOREAU NUMBER CAUGHT	MOREAU %
351-400	6	1	16.7	58	7	12.1	60	5	8.
401-450	28	4	14.3	65	11	16.9	80	12	15.
451-500	31	3	9.7	67	11	16.4	58	9	15.
501-550	80	2	2.5	60	9	15.0	55	4	7.
551-600	69	13	18.8	29	3	10.3	28	3	10.
601-650	42	5	11.0	14	1	7.1	13	1	7.
651-700	19	3	15.8	5	2	40.0	4	1	25.
701-750	20	2	10.0	1	0	0.0	2	-	0.
≥751	3	3	100.0	0	0	0.0	0	-	0.
TOTAL	298	36	12.1	299	44	14.7	300	35	11.

IN-FISHERMAN TOURNAMENT

LENGTH	NUMBER TAGGED	NUMBER CAUGHT	%
351-400	9	1	11.1
401-450	43	11	25.6
451-500	83	23	27.7
501-550	107	27	25.2
551-600	35	9	25.7
601-650	16	3	18.8
651-700	5	1	20.0
TOTAL	298	75	25.2

Table 20 continued...

LAKE FRANCIS CASE

1985 ELECTROFISHING

LENGTH	NUMBER TAGGED	NUMBER CAUGHT	%
≤350	218	74	33.9
351-400	664	259	39.0
401-450	82	42	51.2
451-500	120	29	24.2
501-550	69	22	31.9
551-600	31	10	32.3
601-650	17	2	11.8
651-700	5	1	20.0
701-750	2	1	50.0
≥751	2	-	0.0
TOTAL	1210	440	36.4

1990 NON-TOURNAMENT

LENGTH	NUMBER TAGGED	NUMBER CAUGHT	%
≤350	91	7	7.7
351-400	169	24	14.2
401-450	93	11	11.8
451-500	39	4	10.3
501-550	4	1	25.0
551-600	1	1	100.0
601-650	1	-	0.0
651-700	0	-	-
701-750	1	-	0.0
≥751	0	-	-
TOTAL	399	48	12.0

1990 FISHING TOURNAMENT

LENGTH	NUMBER TAGGED	NUMBER CAUGHT	%
≤350	6	-	0.0
351-400	125	12	9.6
401-450	55	4	7.3
451-500	13	1	7.7
501-550	2	1	50.0
551-600	1	-	0.0
601-650	0	-	-
651-700	0	-	-
701-750	0	-	-
≥751	0	-	-
TOTAL	202	18	8.9

Tag retention and unreported tag rates were not measured or calculated during this study. However, observations of tag loss scars during spawning operations, creel surveys and annual fish populations surveys would suggest that tag loss was minimal. An estimated annual tag loss rate of 24.2% (Carlin tags) was determined as part of a walleye population evaluation in Voyageurs National Park, Minnesota (Kallemeyn, 1989). Unreported tag rate during the early years of this study was expected to be low due to high interest by anglers (Riis 1985). Duerre (1971) measured an 11% unreporting rate for anglers fishing in North Dakota. Tag loss and unreported tags were observed and would both result in exploitation rates reported in this study to be minimum values.

Results from this study document downstream, inter-reservoir transfer of fish. Three percent of the total tags returned from all fish tagged in each reservoir were recovered in the next reservoir downstream. This documents fish survive passage through the power generating facilities of the Missouri River mainstem dams.

EVALUATION OF SONIC TELEMETRY SYSTEMS AS A METHOD OF TRACKING WALLEYE AND SAUGER IN A LARGE RESERVOIR RIVER SYSTEM

STUDY AREA

The study areas for tracking walleye and sauger were Lakes Lewis and Clark, Francis Case and Sharpe which have been previously described.

METHODS

Most of the walleye and sauger tracked in this study were captured during the spawning run in April and May with frame nets. Sonic transmitters were surgically implanted in the fish. Surgical procedures were the same during all years. Nolvasan antiseptic was applied to both the equipment and incision area. The incision was 2 cm long and located on the abdomen approximately 5 cm anterior of the anal fin and off to one side of the center line. The surgery table was made from a styrofoam cooler with a freezer tray inside. Fish were placed dorsal side down in a piece of foam rubber which fit inside the tray. A submersible bilge pump was placed in the bottom of the cooler and was used to irrigate the gills of the fish during surgery. The incision was closed, after implanting the sonic tag, with four to five stitches of nonabsorbable Braunamid surgical suture. Following surgery, fish were released at the site of capture.

Sonic tags, hydrophones and digital acoustical receivers were selected and purchased from Sonotronics Inc. Tucson, Arizona. Two different types of Sonotronics tags were used. The CT-82 was a smaller tag with dimensions of 17 mm x 60 mm. It had a life expectancy of 14 months and a range of 1,000 m (0.62 miles). The CHP-87 was a larger tag with the dimension of 18 mm x 100 mm. It was high powered with a range of 3000 m (1.86 miles) and a life expectancy of two years. Tags used aural codes that omitted a series of pulses and pauses to identify each fish at 75 Khz nominal frequency. The receiver and hydrophone used were model numbers USR-5B and DH-2, respectively.

Fish were located by traveling sections of the river in a boat. After stopping the boat, the hydrophone handle was held vertically in the water and rotated 360 degrees. When a signal was heard the location was determined by moving in the direction of the strongest signal. The fish was considered located when the strongest and clearest signal came from the hydrophone cone being pointed toward the bottom.

When a fish was located, the location, time, date, distance to nearest shore landmark and river mile were recorded. Depth, substrate, water clarity and temperature were also monitored. Because of the size of these reservoirs, very little effort was made to monitor daily movements. The main objective, in addition to testing the feasibility of using sonic telemetry in such large reservoirs, was to determine seasonal movements of the fish.

RESULTS AND DISCUSSION

Lake Sharpe

Four walleyes were collected and implanted with sonic transmitters during the fall of 1986. They were released back into Hipple Lake near Pierre (Table 21). Three of these four walleyes were harvested, in 1988 in the Hipple Lake area. The walleye that escaped anglers remained active until the fall of 1990. That fish made a movement of 45 miles and returned back to Hipple Lake (Figure 5). It was located 53 times and the last location found was Antelope Creek.

Ten walleyes were collected, implanted and released in 1987 (Table 21). Relocation records of each tagged fish are presented by river mile and other well known features in Appendix A. There were three fish which moved from Fort George upstream to the tailrace. Of these three fish, two were caught in the tailrace. Four of the tagged fish moved downstream after being implanted. All of these fish had reached an area by the end of May where they would spend most of the summer. Three walleyes implanted in 1987 were released in the Farm Island/LaFramboise area and remained in this general area.

Contact was made with all 19 walleyes tagged in 1988 and contacts per fish ranged from 2 to 61 (Table 21). One female, implanted in late March and released in the upper end of the stilling basin, had moved by mid-June the full length of the reservoir. Nine (seven of which were females) of the 19 fish tagged were implanted and released at Fort George during spawning season. Approximately half of the fish tagged in 1988 made a downstream movement. Five females were implanted near the tailrace during October. These fish proved to be very interesting along with other tagged walleye that moved into the tailrace. They provided important documentation on movements in and out of the tailrace. Eleven of the walleyes implanted in 1988 were harvested by anglers in 1989. Walleyes that survived two or more years made similar movements in subsequent years (Figures 2-11). Most of these movements were made at the same times from year to year.

A total of 19 walleyes were collected, implanted and released in 1989 (Table 21). Sixteen fish were implanted at Fort George during the spring and the remaining three were tagged in the tailrace. The number of times contacted ranged from 1 to 36. Fourteen of the fish tagged at Fort George in 1989 moved downstream. One fish did not make any major movements. Five of these fish returned to their tagging locations in 1990. Anglers caught seven of the 19 fish during 1989 and 1990. One fish (tag #384) passed through Big Bend Dam and was caught in the tailrace by an angler.

Twelve walleyes were collected, implanted and released in 1990. Ten of these walleyes were females of which six were released at Fort George. Two of the six Fort George fish moved upstream and the other four moved downstream. Anglers caught three of the walleyes tagged during 1990 and another was confirmed dead. One walleye was released at DeGrey and swam downstream to Joe Creek. Another walleye was caught by anglers in the Fort George area after it moved from there to Cedar Creek and back. Similar to Lake Francis Case, walleye which had moved into the lower portion of the reservoir also tended to move into deeper water in the summer months and were fairly inactive. Walleye tracking efforts were ceased in the fall of 1990.

Table 21. Summary of sonic telemetry data and physical characteristics for 64 walleyes in Lake Sharpe, 1986 - 1990.

Fish Number	Date Implemented	Release Location	Sex	Length (mm)	Date of Last Location	Last Location Found	Number of Times Located
2255	Oct 8, 1986	Hipple Lake	-	620	Aug 6, 1990	Antelope Creek	53
2273-86*	Oct 9, 1986	Hipple Lake	-	-	Jul 3, 1988	Hipple Lake	15
2327*	Oct 9, 1986	Hipple Lake	-	515	Jun 1, 1988	Antelope Creek	11
2453-86*	Oct 9, 1986	Hipple Lake	F	560	Jun 22, 1988	Hipple Lake	17
2345	Mar 5, 1987	Polo Field	F	603	Nov 2, 1988	Farm Island Marsh	30
2336**	Mar 6, 1987	Ft. George	F	516	Jun 25, 1990	four miles down from DeGrey	17
2363	Apr 6, 1987	Ft. George	F	580	Nov 13, 1990	Medicine Creek	23
294*	Apr 7, 1987	Echo Point	F	555	Aug 15, 1987	Tailrace	24
2246-87*	Apr 7, 1987	Ft. George	F	520	Apr 25, 1989	Hipple Lake	11
2264	Apr 7, 1987	Echo Point	-	-	Aug 5, 1988	Tailrace	23
2426	Apr 8, 1987	Ft. George	-	560	Aug 9, 1988	Two mile up from Medicine Creek	9
2444-87*	Apr 8, 1987	Ft. George	M	535	Nov 10, 1988	Tailrace	47
2237	Jun 12, 1987	LaFramboise	F	475	Nov 22, 1988	Farm Island Marsh	22
2354	Jun 15, 1987	Dump Island	-	-	Aug 18, 1988	Half mile down from Dump Island	10
3344*	Mar 30, 1988	Stilling Basin	F	600	Jun 13, 1988	North Bend	4
1238*	Apr 4, 1988	Polo Field	F	673	Aug 1, 1989	Two mile down from Medicine Creek	5
366	Apr 19, 1988	Ft. George	F	510	Jul 31, 1989	Eight miles down from West Bend	5
2435	Apr 20, 1988	Ft. George	M	520	Oct 16, 1991	Antelope Creek	61
348-88A*	Apr 20, 1988	Ft. George	F	540	Sep 29, 1988	Below Big Bend Dam	2
339-88*	Apr 28, 1988	Ft. George	F	470	May 7, 1989	LaFramboise Causeway	6
375*	Apr 28, 1988	Ft. George	F	580	Apr 22, 1989	DeGrey	3
2534-88	Apr 29, 1988	Ft. George	F	540	May 4, 1989	One mile up from Ft. George	3
2543	Apr 29, 1988	Ft. George	F	580	May 9, 1989	Antelope Island	14
2633	Apr 29, 1988	Ft. George	M	460	Oct 16, 1989	Farm Island Marsh	38
2228-88	May 13, 1988	Hipple Lake	F	686	Jun 26, 1990	Cedar Creek	9
2453-88	May 24, 1988	Farm Island	-	-	Aug 20, 1990	Farm Island Marsh	43
2226*	Oct 5, 1988	Tailrace	F	660	Sep 16, 1989	Tailrace	44
2235-88*	Oct 25, 1988	Echo Point	F	483	Sep 16, 1989	Tailrace	16
2273-88*	Oct 25, 1988	Tailrace	F	559	Jun 11, 1990	Tailrace	41
3333-88*	Oct 25, 1988	Tailrace	F	622	Aug 16, 1989	Tailrace	41
348-88*B	Oct 25, 1988	Tailrace	F	540	May 15, 1989	West Bend	2
5322-88*	Oct 25, 1988	Tailrace	F	521	Jul 21, 1989	Tailrace	24
2442-88*	Oct 26, 1988	Ft. George	F	521	May 27, 1989	Tailrace	30
339-89	Apr 19, 1989	Ft. George	F	533	Jun 16, 1990	Cedar Creek	12
3342*	Apr 19, 1989	Ft. George	M	533	Sep 13, 1989	DeGrey	10
357-89*	Apr 19, 1989	Ft. George	F	559	May 10, 1989	Joe Creek	3
456-89	Apr 20, 1989	Ft. George	M	584	Jun 6, 1989	Tailrace	5
97-89	Apr 24, 1989	Ft. George	F	570	Jun 1, 1989	Cedar Creek	3
258	Apr 24, 1989	Ft. George	F	590	Jun 11, 1990	Four miles up from West Bend	9
267	Apr 24, 1989	Ft. George	F	610	May 20, 1990	Down's Marina	9

Table 21. Continued

Fish Number	Date Implemented	Release Location	Sex	Length (mm)	Date of Last Location	Last Location Found	Number of Times Located
276	Apr 24, 1989	Ft. George	F	530	May 9, 1989	Cedar Creek	1
285	Apr 24, 1989	Ft. George	F	650	Jul 16, 1990	Seven miles up from West Bend	8
384*	Apr 24, 1989	Ft. George	F	520	Jun 30, 1990	Big Bend Tailrace	2
447*	Apr 24, 1989	Ft. George	M	540	Jun 9, 1990	West Bend	12
465-89	Apr 24, 1989	Ft. George	F	530	May 9, 1989	2-1/2 miles down from Cedar Creek	1
3434	Apr 24, 1989	Ft. George	F	500	Jul 12, 1990	1-1/2 miles down from Cedar Creek	13
88	Apr 25, 1989	Ft. George	F	520	Jun 14, 1990	2-1/2 miles up from Cedar Creek	18
3535*	Apr 25, 1989	Ft. George	F	460	May 11, 1990	Bridge at Pierre	6
375	May 19, 1989	Tailrace	F	520	Apr 21, 1990	One mile up from Medicine Knoll Creek	5
249	May 25, 1989	Ft. George	F	520	Apr 19, 1990	DeGrey	14
2246-89*	Jun 30, 1989	Tailrace	-	530	Jul 12, 1989	Stilling Basin	4
2534-89*	Jun 30, 1989	Tailrace	-	500	Oct 22, 1990	Tailrace	36
97-90	Apr 26, 1990	Ft. George	F	-	Aug 9, 1990	Two miles down from Cedar Creek	7
348-90	Apr 26, 1990	Ft. George	F	560	Aug 30, 1990	Two miles up from Joe Creek	6
357-90	Apr 26, 1990	Ft. George	F	585	Aug 30, 1990	Joe Creek	4
456-90**	Apr 26, 1990	Ft. George	F	478	Aug 28, 1990	Joe Creek	6
465-90*	Apr 26, 1990	Ft. George	F	460	May 30, 1990	Tailrace	4
2442-90*	Apr 26, 1990	Ft. George	F	475	Oct 6, 1990	Sand Creek	10
2226-90	May 9, 1990	LaFramboise	F	500	Jul 16, 1990	Two miles up from West Bend	4
2235-90	May 9, 1990	Tailrace	F	500	May 10, 1990	Tailrace	1
5322-90	May 9, 1990	Tailrace	F	-	Sep 12, 1990	LaFramboise Lagoon	10
3333-90*	May 10, 1990	Tailrace	M	535	Jun 14, 1990	Tailrace	8
2246-90	May 16, 1990	Stilling Basin	M	480	Jun 20, 1991	Divers Point	17
374	May 23, 1990	DeGrey	F	520	Aug 28, 1990	Joe Creek	5

* Caught by angler

** Assumed deceased

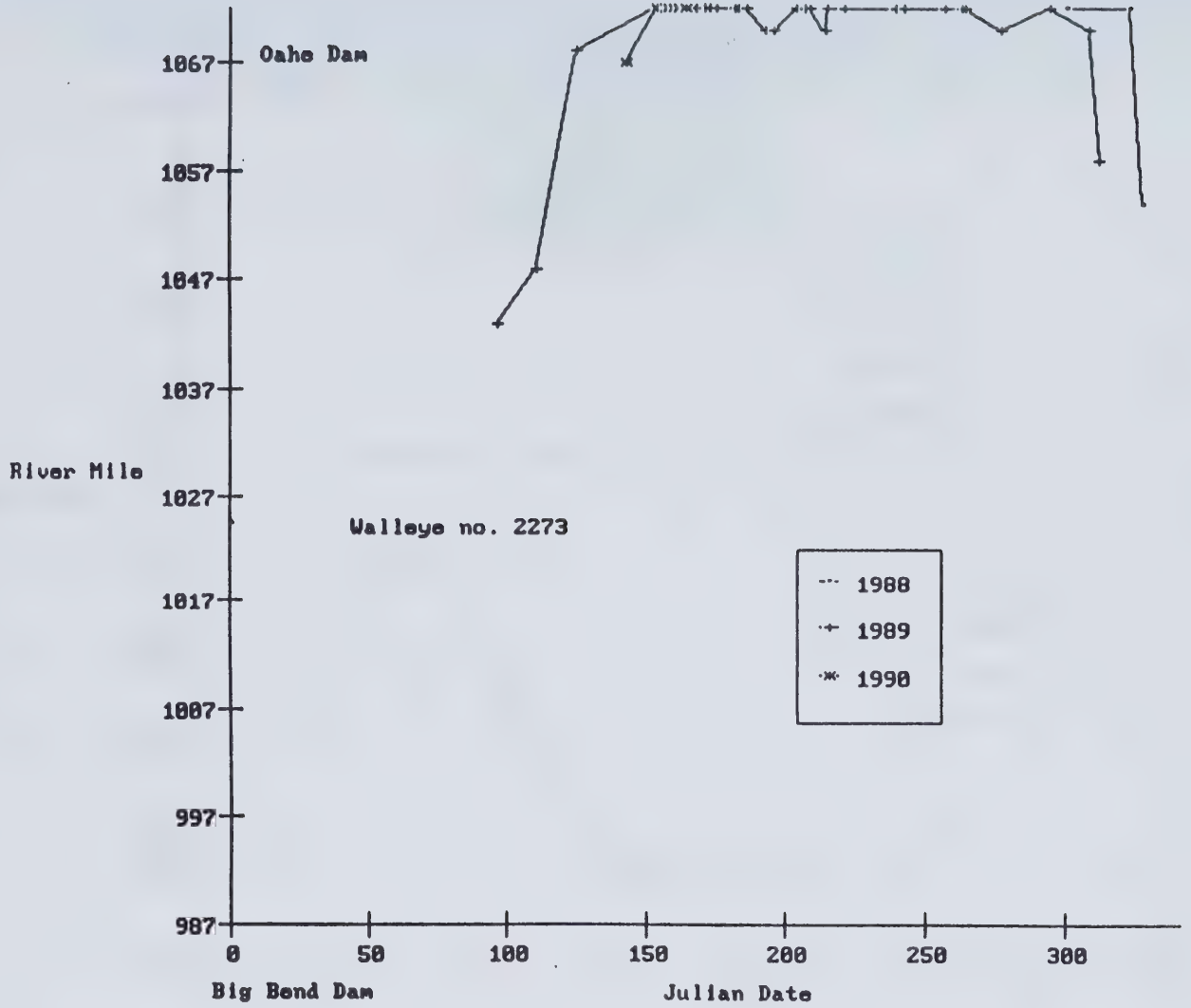

Figure 2. Movement patterns of a female walleye that spent three summers in the tailrace and moved downstream in the fall, Lake Sharpe.

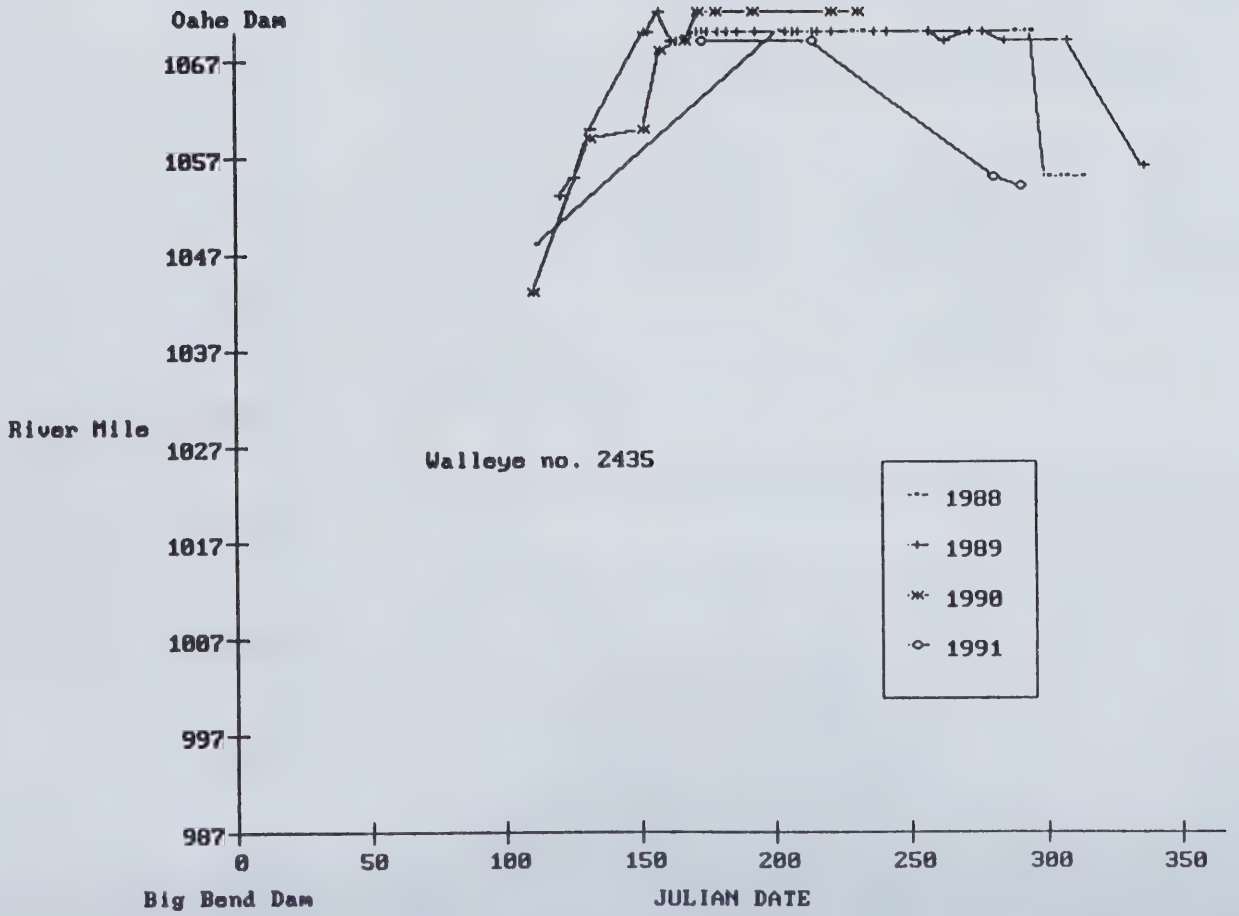

Figure 3. Movement patterns of a male walleye that spent four summers in the tailrace, Lake Sharpe.

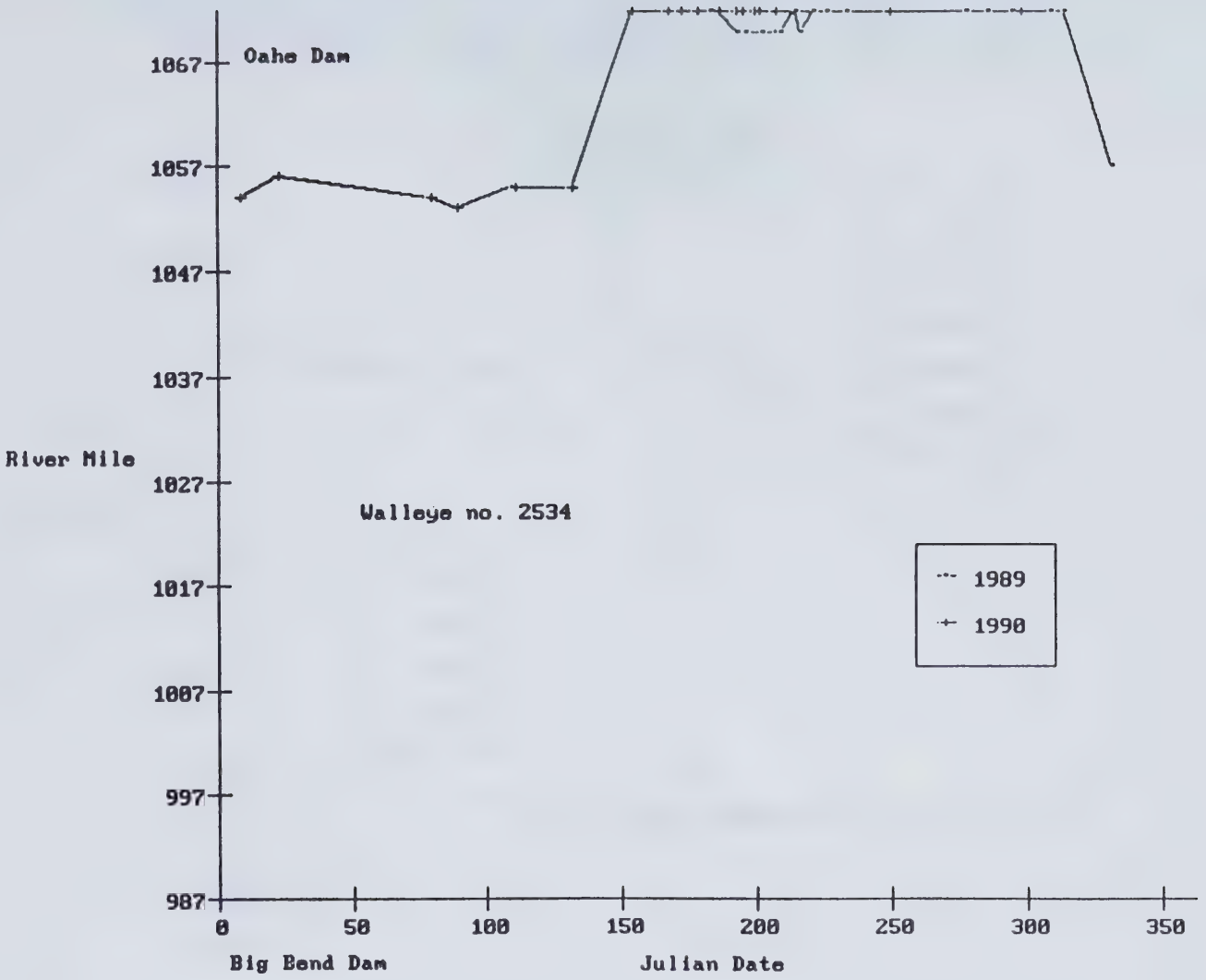

Figure 4. Movement patterns of a walleye that spent the summers of 1989 and 1990 in the tailrace and was in the Antelope Creek area from the fall of 1989 through the spring of 1990 , Lake Sharpe.

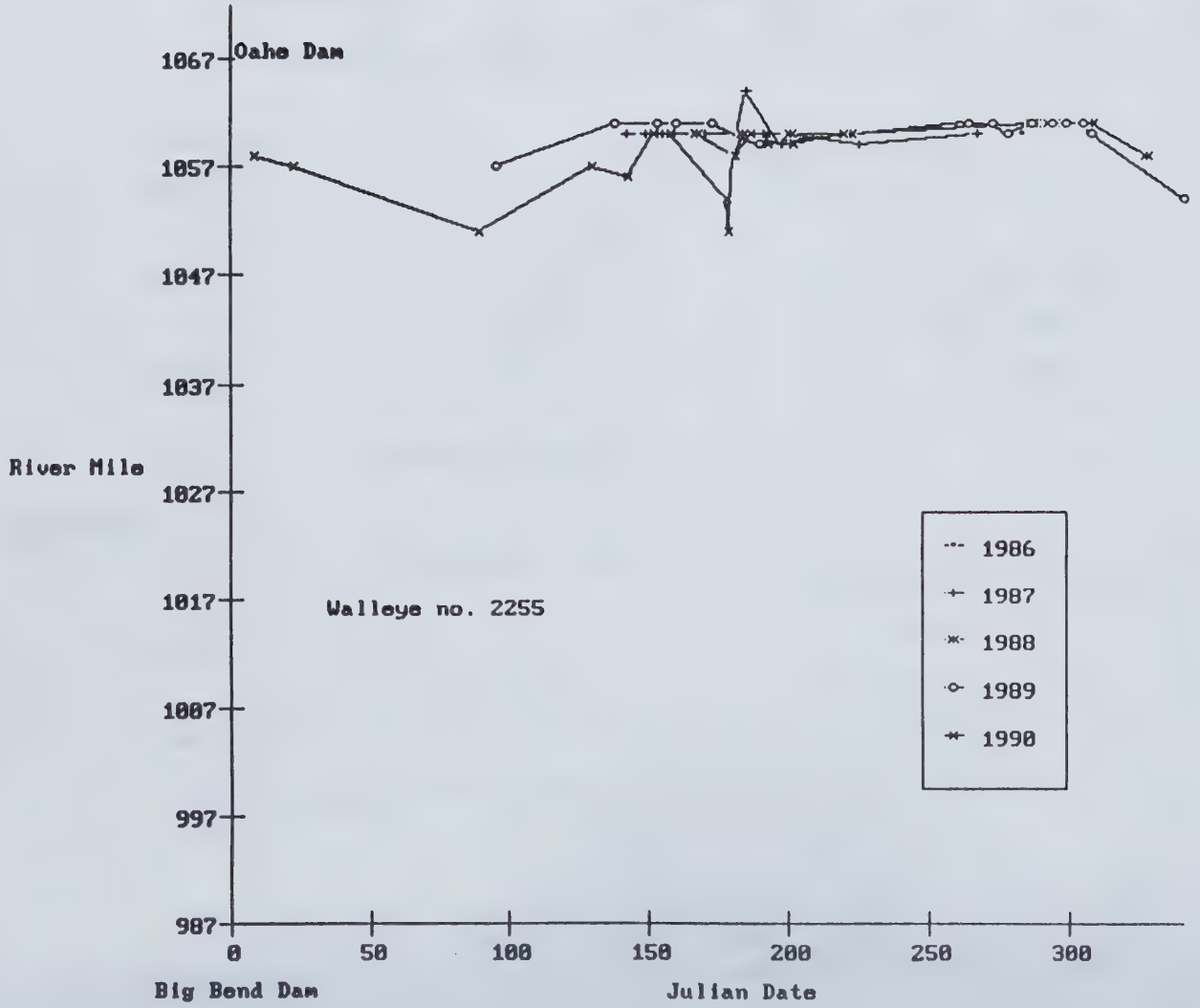

Figure 5. Movement patterns of a walleye that was always found in Hipple Lake during mid-summer through fall, Lake Sharpe.

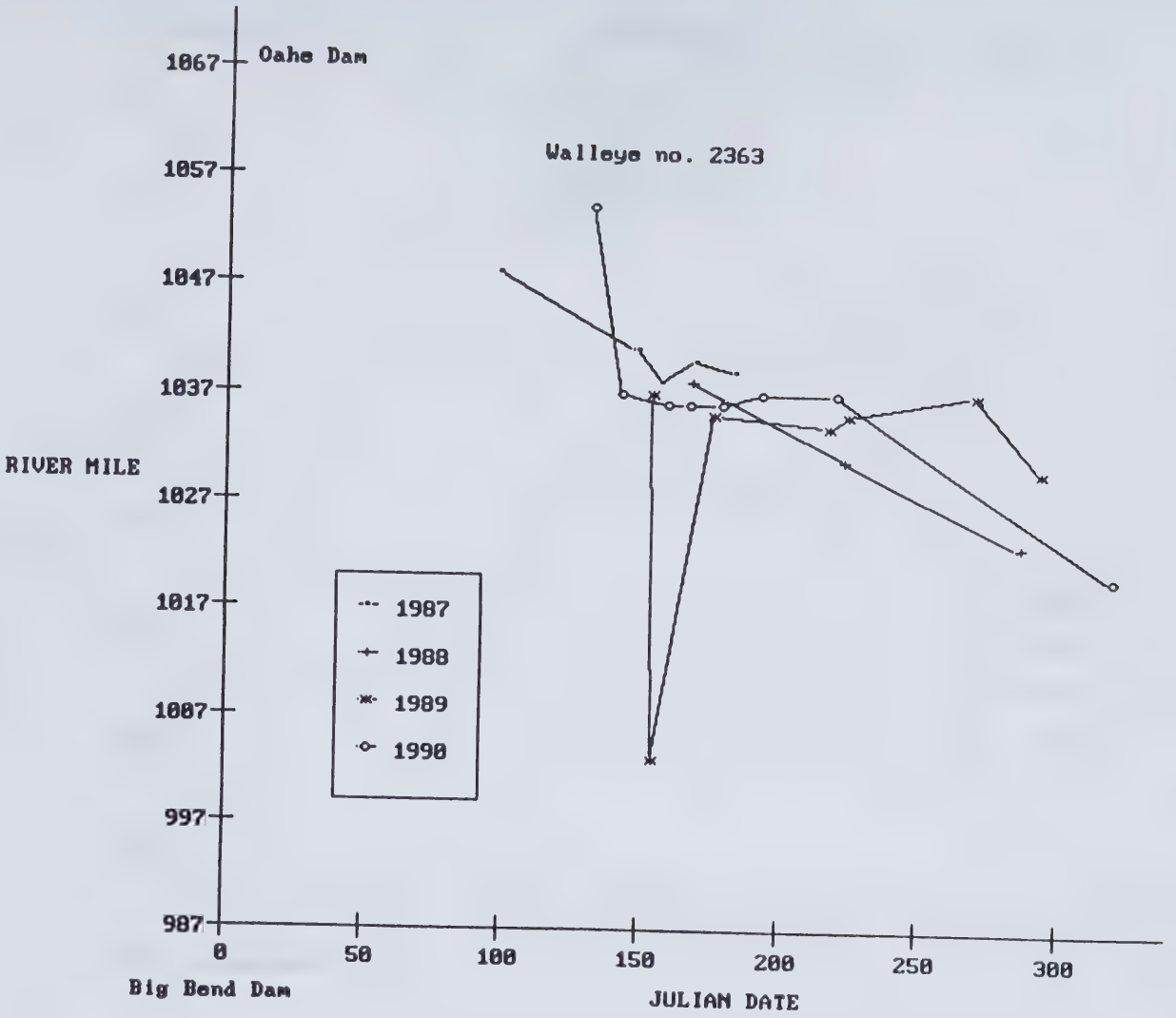

Figure 6. Movement patterns of a female walleye that moved downstream throughout the tracking season for each of four years. It is uncertain when its upstream migration took place, Lake Sharpe.

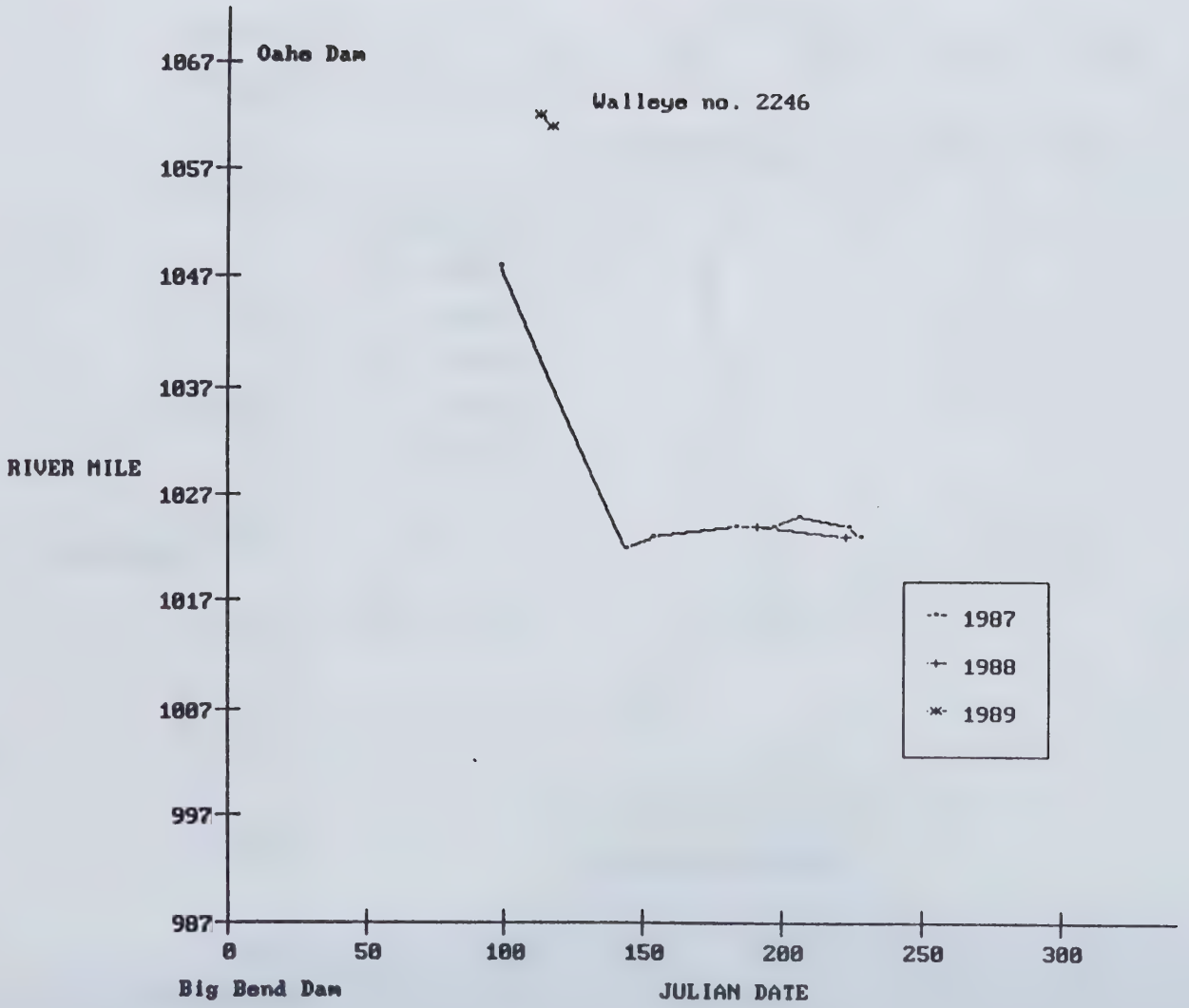

Figure 7. Movement patters of a female walleye that made long trips between spring and summer, Lake Sharpe.

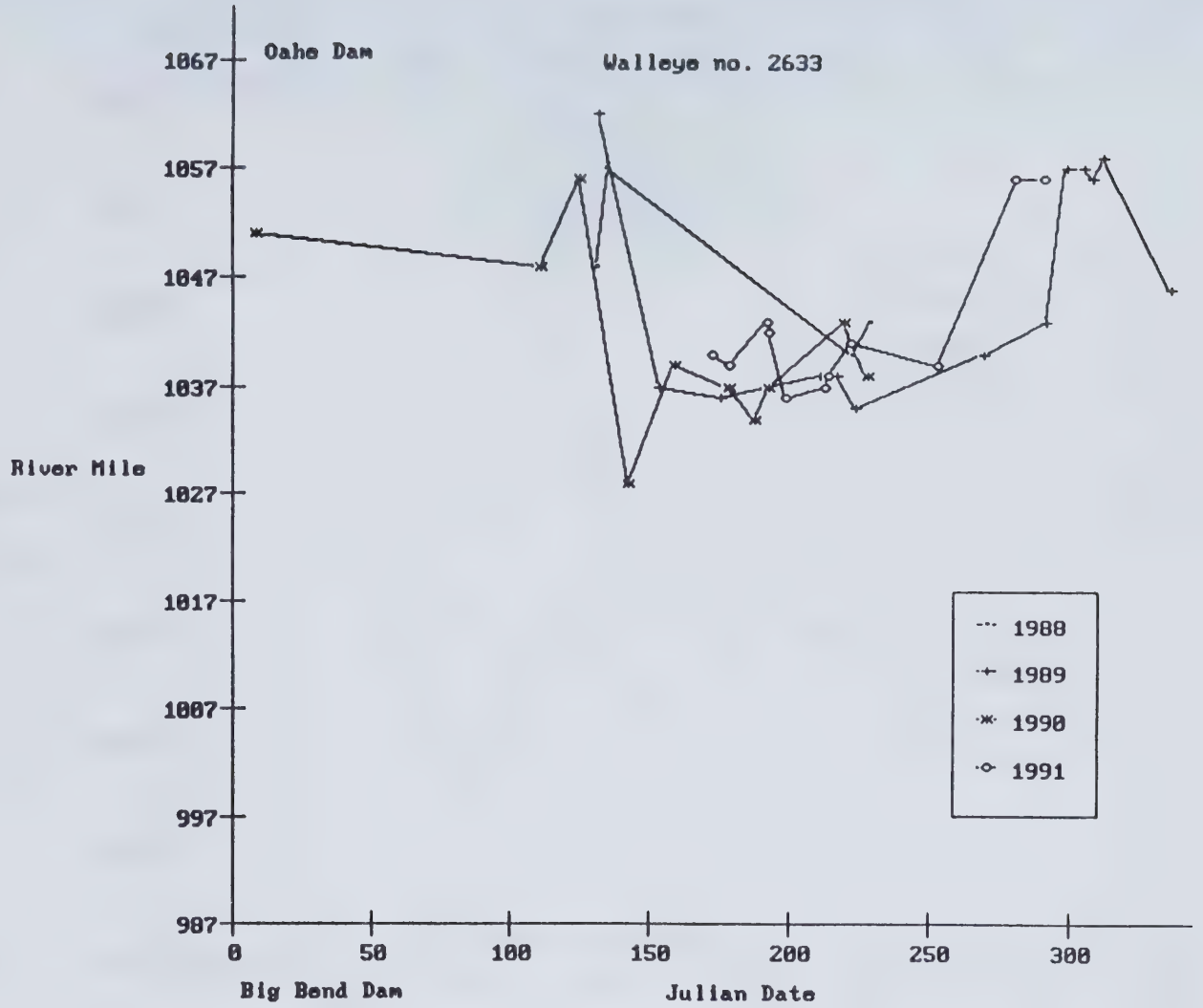

Figure 8. Movement patterns of a male walleye that spent its summer near DeGrey, then moved upstream in the fall to the Farm Island area and returned to its summer home in May, Lake Sharpe.

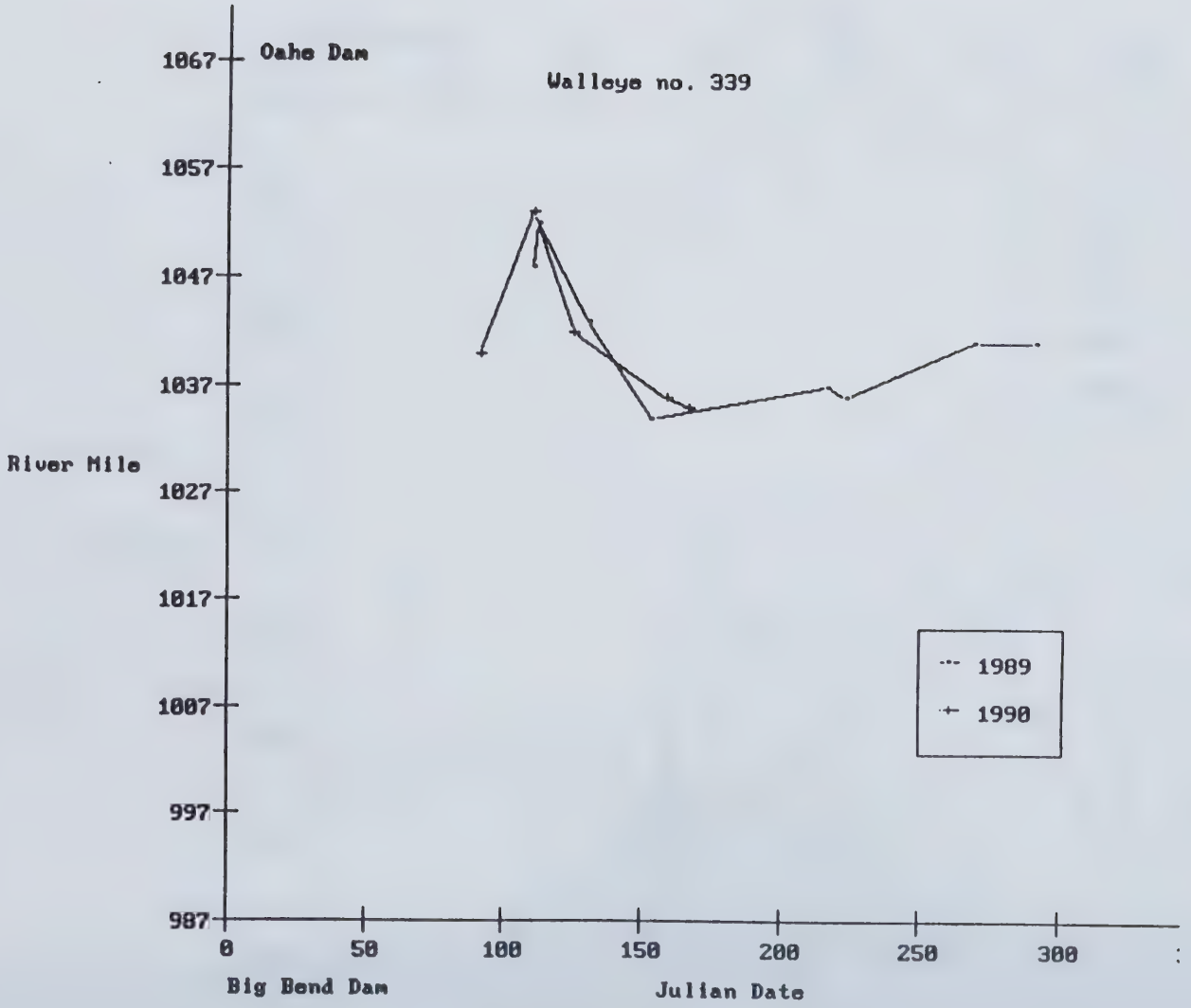

Figure 9. Movement patterns of a female walleye that spent the summers near DeGrey and spawned near Antelope Creek in April of 1989 and 1990, Lake Sharpe.

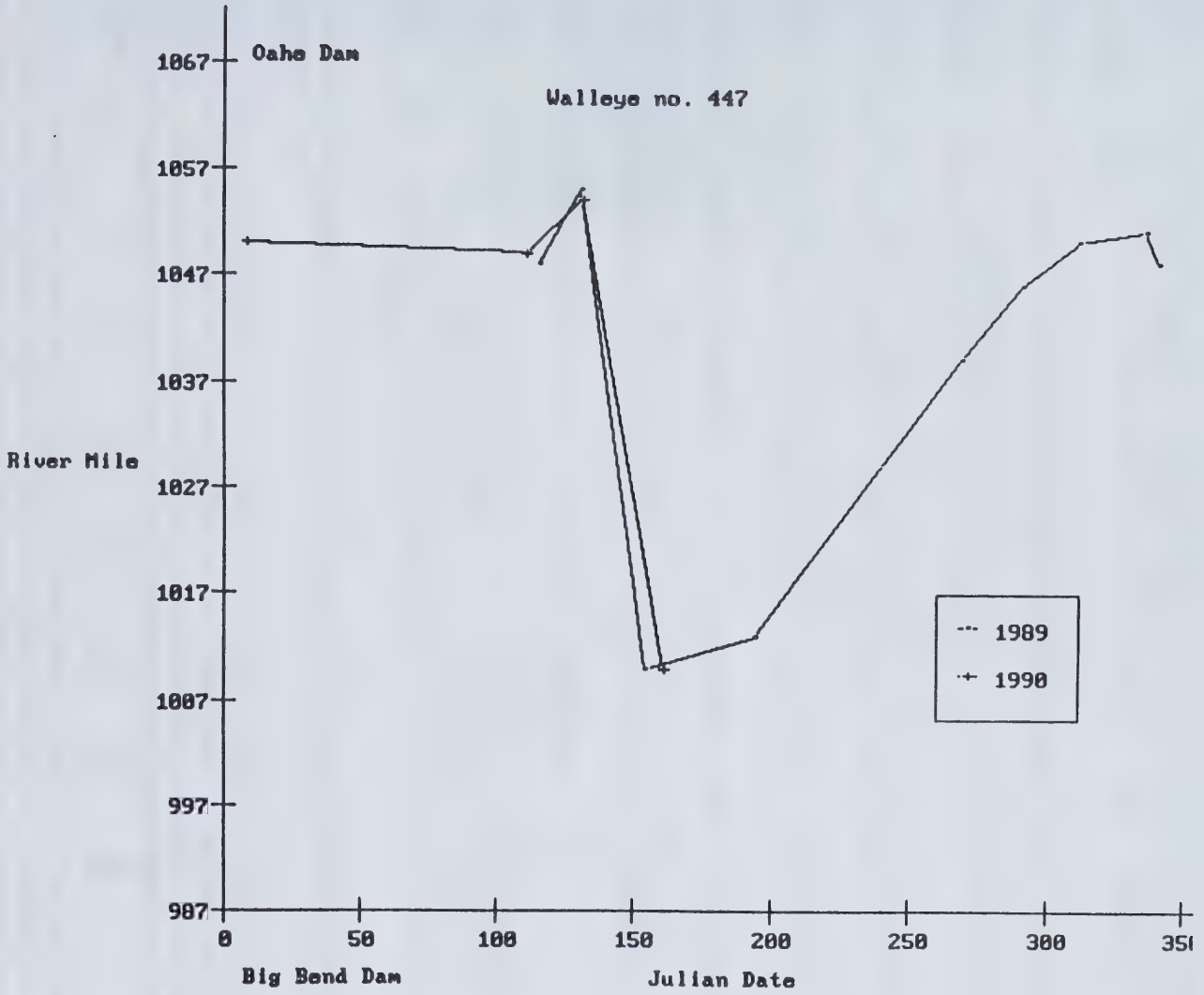

Figure 10. Movement patterns of a male walleye that made the same long migration in both 1989 and 1990. The last data point in 1990 was provided by the angler that caught the fish near West Bend, Lake Sharpe.

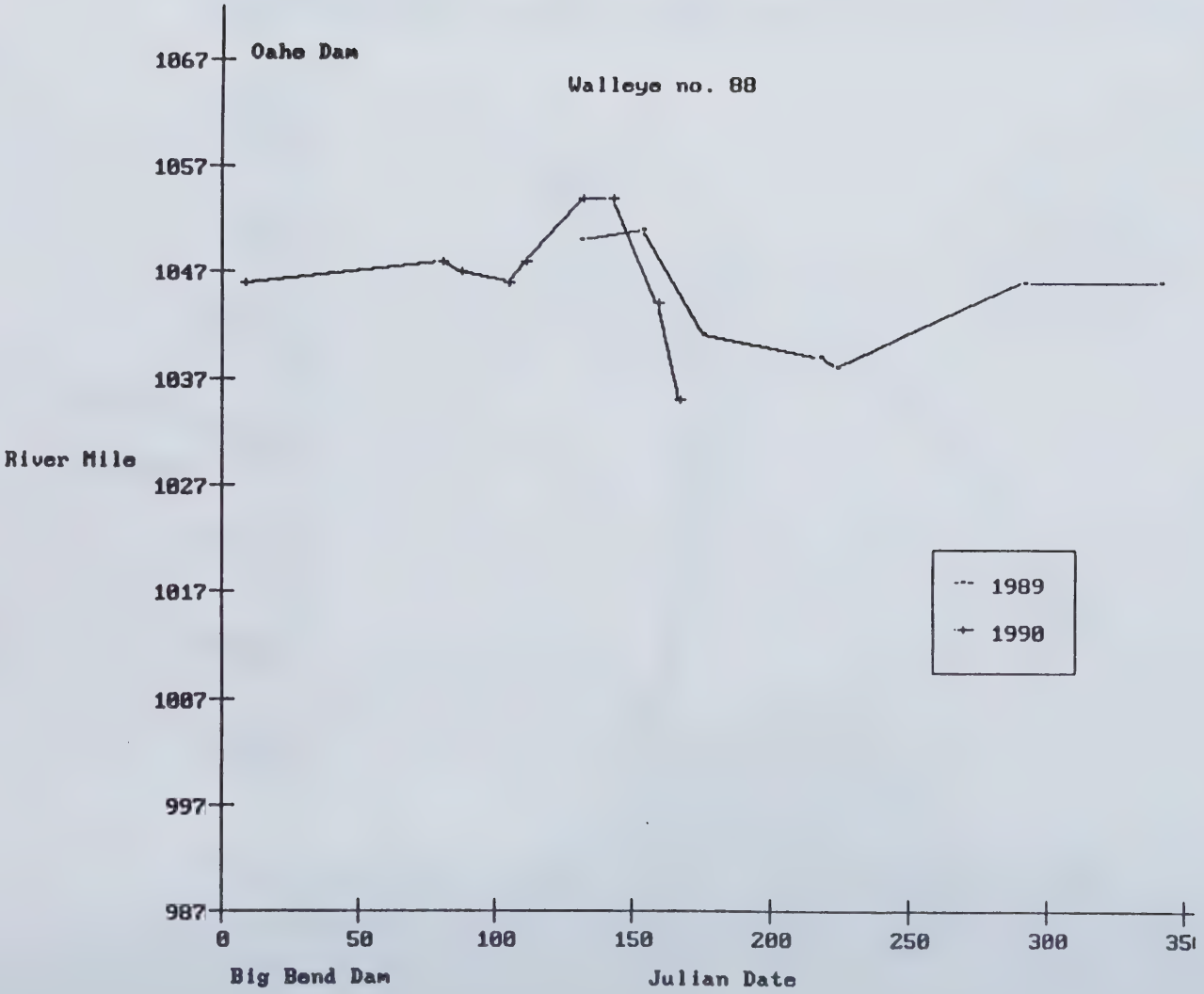

Figure 11. Movement patterns of a female walleye that could be found near Antelope Creek during spawning season and in the middle of Lake

GENERAL OBSERVATIONS ON LAKE SHARPE WALLEYE

- Walleye annually return to spawning areas.

- Most walleye make seasonal movements from spring through fall and repeat these movements every year. There is an upstream movement in the fall.

- Many of the walleye in Lake Sharpe spawn in one large area (Ft. George, DeGrey, Antelope). However, walleye spawning activity occurs throughout Lake Sharpe. There is not a spawning concentration as in the western tributaries of Lake Oahe.

- Walleye in the tailrace make spawning movements down river in the spring.

- Walleye moved the greatest distances during late fall and early spring. In summer, some walleye do not move any distance at all.

- Walleye may return to areas the size of 50 m^2 year after year (Foggy Bottom 2534 and corner of causeway in Hipple Lake 2255, since 86).

- For our study fish, the highest catch rates occurred in the tailrace followed by the stretch from Fort George to West Bend.

- Almost all the walleye caught in the tailrace were caught after dark.

- Fish in the upper reaches were found in much shallower water than in the lower lake and seemed to be more active during the summer months.

- Fish in the tailrace were very vulnerable to angling.

- Some fish moved the entire length of the reservoir while others only moved a couple of miles. However, each fish still had somewhat predictable movements. Walleye did not appear to randomly wander no matter how large or small their range was. This was documented by the fish that were tracked over one or more years.

- One walleye tagged in the tailrace of Oahe was caught a year later in Lake Francis Case.

- Lake Sharpe lacks natural structure and walleyes did not relate to obvious structure such as definite drop offs as in Lake Oahe. Walleye were usually found in extended stretches of deeper water with no apparent features. Walleye do use dead trees, mainly in the lower section (DeGrey-Medicine Creek).

- Most of the tagged walleye in the tailrace leave the tailrace by December and move down to the area between Farm Island and DeGrey for the winter. These walleye remained there to spawn and were back in the tailrace by the end of May and early June. The walleye that remained in the tailrace all winter used the stilling basin in January-March and then move down river.

- The stress of tagging did not appear to have a long term effect on the behavior of the fish. One walleye was caught seven hours after tag implantion. Walleye will continue their normal movement patterns if they are released in the same general area as tagged.

- Sonic telemetry is a feasible method of tracking walleye and sauger in large reservoirs.

Lake Francis Case

Eleven walleye (6F, 5M) were collected, implanted with sonic transmitters and released back into Lake Francis Case, near Chamberlain during 1988 (Appendix B). In 1989, 20 walleye (19F, 1M) were collected, implanted and released (Appendix B). Tracking efforts in 1988 resulted in at least two contacts with 10 of 11 fish. (Appendix B). All walleye exhibited a downstream movement from the release site. One fish (tag no. 357) remained near the release site for about three weeks, then one month later was caught by an angler near the face of Ft. Randall Dam, a downstream movement of 87 miles (over 2.5 miles/day). Two of the 1988 sonic tagged fish were caught by anglers during 1988.

At least one contact was made with 18 of the 20 walleye sonic tagged in 1989 during tracking efforts that year. No contact was ever made with one fish and one was captured by an angler. Additionally, at least one contact was made for four of the 1988 tagged fish. As noted in 1988, most 1989 fish exhibited a general downstream movement. Eight of the fish were either contacted or captured (by an angler) over 50 miles downstream from their release site. Fish which had moved into the lower portion of the reservoir also tended to move into deeper water (>40') in the summer months, generally becoming fairly inactive. Movement into water 100 ft deep was observed with one fish (tag no. 22324). Fish survey work on the reservoir (Unkenholz et al. 1985) has also observed walleye at or near the 100 ft depth.

Eight of the walleyes taged in 1989 and three of the walleyes tagged in 1988 were caught by anglers during 1989. One of the fish, (tag no. 22324) was caught below Ft. Randall Dam. This fish had to have passed through the power generation facilities of the dam where intakes are located at depths of 70 to 90 ft, depending upon the time of year.

Limited tracking efforts in 1990, resulted in location of two 1988 fish (1 suspected to be deceased) and four of the 1989 fish (1 suspected to be deceased). One of the walleyes tagged during 1989 was caught by an angler in 1990.

Ft. Randall Tailwaters/Missouri River

Six walleye (5F, 1M) were collected, implanted with sonic transmitters (3 HP, 3N), and released between 4/21/87 and 4/22/87 at the boat ramp bay of the Ft. Randall tailwaters area (Figure 12). Subsequent tracking efforts resulted in at least one contact being made with five of the six released fish (Appendix C). All contacts were restricted to an area from Ft. Randall Dam downstream about 3.5 miles. Clarity of the sonic signal was excellent in the immediate area of the tailwaters, but began to deteriorate rapidly as tracking efforts moved down river. Cause for the signal disruption are unknown, however extensive background noise, believed to be caused by sand movement, was the suspected problem. Several efforts to evaluate signal range/reception in the river portion of the study, area with transmitters suspended below marker buoys resulted in a maximum detection range of 15-30 feet. Anticipated concerns over signal reception problems in the tailrace discharge channel proved unfounded as several clear contacts were made in this area.

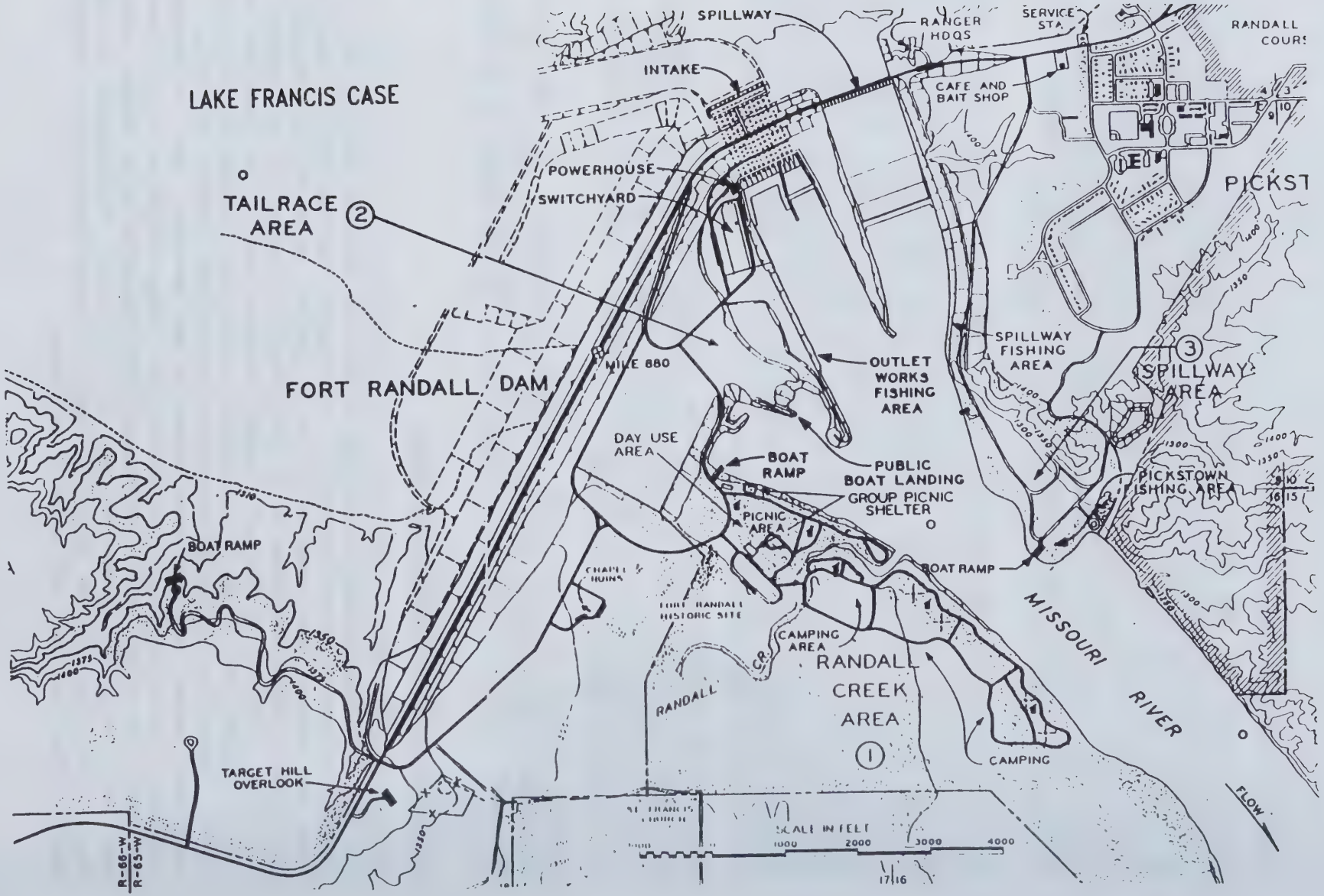

Figure 12. Ft. Randall Dam tailrace area.

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Appendix A. Relocation records of walleyes implanted with sonic transmitters in Lake Sharpe.

TAG NO:2255

Released on 10-08-86 at Hipple Lake
LG: 62.0 cm WT: - Sex:

DATE	RIVER MILE	LOCATION
05/20/87	1060	Hipple Lake
05/26/87	1060	Hipple Lake
05/27/87	1060	Hipple Lake
06/02/87	1060	Hipple Lake
06/17/87	1060	Hipple Lake
06/29/87	1060	Hipple Lake
07/02/87	1064	LaFramboise Lake
07/15/87	1059	Farm Island
07/17/87	1060	Farm Island
08/11/87	1059	Farm Island
09/22/87	1060	Hipple Lake
06/14/88	1060	Hipple Lake
06/28/88	1058	2 miles upstream from Farm Island buoys
07/01/88	1060	Farm Island
07/18/88	1060	Farm Island
08/08/88	1060	Farm Island
10/12/88	1061	Hipple Lake
10/17/88	1061	Hipple Lake
10/18/88	1061	Hipple Lake
10/20/88	1061	Hipple Lake
10/31/88	1061	Hipple Lake
11/02/88	1061	Hipple Lake
11/22/88	1058	Across from Farm Island marsh
04/04/89	1057	100 yds. upstream from mouth of Hipple Lake
05/16/89	1061	Hipple Lake
05/31/89	1061	Hipple Lake
06/07/89	1061	Hipple Lake
06/20/89	1061	Hipple Lake
08/07/89	1059	Along Farm Island Channel
09/19/89	1061	Hipple Lake
09/28/89	1061	Hipple Lake
10/03/89	1060	Hipple Lake
10/12/89	1061	Hipple Lake
10/19/89	1061	Hipple Lake, along Causeway
10/24/89	1061	Hipple Lake, near Crappie Hole
10/30/89	1061	Hipple Lake
11/02/89	1060	Hipple Lake
12/05/89	1054	3 miles upstream from Medicine Knoll Creek
01/08/90	1058	Across from Hipple Channel
01/22/90	1057	Near Hipple Channel
03/29/90	1051	Medicine Knoll Creek
05/08/90	1057	Out from Hipple Lake Channel
05/21/90	1056	Antelope Creek
05/30/90	1060	Hipple Lake
06/05/90	1060	Hipple Lake
06/25/90	1054	Antelope Creek

06/26/90	1051	Medicine Knoll Creek
06/28/90	1058	Along Farm Island Marsh
07/04/90	1060	Along Farm Island, mid island
07/09/90	1060	Along Farm Island
07/10/90	1059	Along Farm Island, lower end
07/19/90	1059	Along Farm Island
08/06/90	1060	Antelope Creek

TAG NO:2273-86

Released on 10-09-86 at Hipple Lake
LG: - WT: - Sex: -

DATE	RIVER MILE	LOCATION
02/06/87	1059	Hipple Lake
02/09/87	1059	Hipple Lake
02/11/87	1059	Hipple Lake
02/19/87	1059	Hipple Lake
03/06/87	1059	Hipple Lake
05/27/87	1059	Hipple Lake
06/02/87	1060	Hipple Lake
06/17/87	1061	Crappie Hole (Hipple Lake)
06/29/87	1060	Hipple Lake
07/03/87	1060	Hipple Lake
07/30/87	1064	LaFramboise Island
08/17/87	1066	LaFramboise Island
06/14/88	1060	Hipple Lake
06/17/88	1060	Hipple Lake
07/03/88	1064	Caught by angler Farm Island causeway

TAG NO:2327

Released on 10-09-86 at Hipple Lake
LG:51.5 cm WT: - Sex: -

DATE	RIVER MILE	LOCATION
02/06/87	1057	South end Hipple Lake
02/09/87	1057	Downstream from Hipple Lake
02/11/87	1057	South end Hipple Lake
02/19/87	1057	South end Hipple Lake
03/06/87	1058	Hipple Lake
05/20/87	1058	Hipple Lake
06/22/87	1022	1-1/2 miles upstream from Medicine Creek
07/01/87	1024	2-1/2 miles upstream from Medicine Creek
07/06/87	1017	2-1/2 miles downstream from Medicine Creek
08/13/87	1012	2 miles downstream from West Bend
06/01/88	1055	Caught by angler at Antelope Creek

TAG NO:2453-86

Released on 10-09-86 at Hipple Lake
LG: 56.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
02/06/87	1059	Hipple Lake
02/09/87	1059	Hipple Lake
05/12/87	1060	Hipple Lake
05/15/87	1060	Hipple Lake
05/20/87	1060	Hipple Lake
05/26/87	1060	Hipple Lake
05/27/87	1060	Hipple Lake
06/02/87	1060	Hipple Lake
06/17/87	1061	Hipple Lake
06/29/87	1061	Hipple Lake
07/03/87	1061	Hipple Lake
07/15/87	1061	Hipple Lake
07/17/87	1061	Hipple Lake
07/28/87	1061	Hipple Lake
08/18/87	1060	Hipple Lake
09/22/87	1060	Hipple Lake
05/22/88	1061	Caught by angler in Hipple Lake

TAG NO:2345

Released on 03-05-87 at Polo Field
LG: 60.3 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
04/07/87	1057	Hipple Lake
04/08/87	1057	Hipple Lake
05/12/87	1057	Hipple Lake
05/15/87	1057	Hipple Lake
05/20/87	1059	Hipple Lake
05/27/87	1059	Hipple Lake
06/17/87	1059	Straight So. of Cattlemans Club
06/29/87	1064	Near Dump Island
07/07/87	1064	LaFramboise Lake
07/15/87	1064	LaFramboise Lake
07/17/87	1064	LaFramboise Lake
07/22/87	1064	LaFramboise Lake
07/24/87	1064	LaFramboise Lake
07/30/87	1064	LaFramboise Lake
08/18/87	1060	Hipple Lake
09/22/87	1060	Hipple Lake
05/13/88	1059	Hipple Lake
06/24/88	1057	Hipple Lake
07/15/88	1060	300 yds downstream Hipple Lake boat ramp
07/18/88	1060	250 yds downstream girl scout cabin
08/08/88	1060	Hipple Lake
08/15/88	1060	Hipple Lake
10/04/88	1060	Hipple Lake
10/06/88	1060	Hipple Lake
10/08/88	1060	Girl scout cabin (Hipple)

10/17/88	1060	Girl scout cabin
10/20/88	1061	Hipple Lake
10/25/88	1060	Hipple Lake
10/31/88	1060	Hipple Lake
11/02/88	1057	Along Farm Island Marsh

TAG NO:2336

Released on 03-06-87 at Ft. George
LG: 51.6 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/25/87	1038	4 miles downstream from DeGrey
06/16/87	1038	4 miles downstream from DeGrey
06/24/87	1038	4 miles downstream from DeGrey
06/30/87	1038	4 miles downstream from DeGrey
07/12/87	1038	4 miles downstream from DeGrey
07/13/87	1038	4 miles downstream from DeGrey
08/12/87	1038	4 miles downstream from DeGrey
08/09/88	1038	4 miles downstream from DeGrey
08/09/88	1038	4 miles downstream from DeGrey
10/28/88	1038	4 miles downstream from DeGrey
08/04/89	1038	4 miles downstream from DeGrey
08/10/89	1038	4 miles downstream from DeGrey
09/25/89	1038	4 miles downstream from DeGrey
10/18/89	1038	4 miles downstream from DeGrey
05/21/90	1038	4 miles downstream from DeGrey
06/06/90	1038	4 miles downstream from DeGrey
06/25/90	1038	4 miles downstream from DeGrey

TAG NO:2363

Released on 04-06-87 at Ft. George
LG: 58.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/25/87	1041	Downstream 2 miles from DeGrey
05/26/87	1041	Across from DeGrey Downstream 1 mile
06/04/87	1038	4 miles Downstream from DeGrey
06/16/87	1040	2-1/2 miles downstream from DeGrey
06/30/87	1039	3 miles downstream from DeGrey
06/15/88	1038	4 miles downstream from Degrey
08/09/88	1031	1 mile downstream from Cedar Creek
10/11/88	1023	1 mile upstream from Medicine cr
06/01/89	1037	5 miles downstream from DeGrey
06/02/89	1003	5 miles downstream from West Bend
06/23/89	1035	3-1/2 miles upstream from Cedar Creek
08/03/89	1034	1-1/2 miles upstream from Cedar Creek

08/10/89	1035	2 miles upstream from Cedar Creek
09/25/89	1037	5-1/2 miles downstream from DeGrey
10/18/89	1030	2-1/2 miles downstream from Cedar Creek
05/10/90	1054	Antelope Creek
05/21/90	1037	5 miles downstream from DeGrey
06/06/90	1036	5-1/2 miles downstream from DeGrey
06/14/90	1036	5-1/2 miles downstream from DeGrey
06/26/90	1036	6 miles downstream from DeGrey
07/10/90	1037	5-1/2 miles downstream from DeGrey
08/06/90	1037	5-1/2 miles downstream from DeGrey
11/13/90	1020	Medicine Creek

TAG NO:294

Released on 04-07-87 at Ft. George
LG: 55.5 cm WT: 2.5 kg Sex: F

DATE	RIVER MILE	LOCATION
05/12/87	1069	Near Echo Point
05/18/87	1071	Near Diver's Point
05/19/87	1070	Divers Point
05/20/87	1071	Near Diver's Point
05/26/87	1070	Divers Point
05/28/87	1069	1/4mile upstream from Echo Point
05/29/87	1068	Echo Point
06/02/87	1070	Divers Point
06/03/87	1070	Divers Point
06/04/87	1070	Mouth of Stilling Basin
06/07/87	1070	Mouth of Stilling Basin
06/08/87	1069	1 mile downstream from Divers Point
06/15/87	1069	1/2 mile downstream from Echo Point
06/23/87	1070	1/2 way between Divers & Echo Points
07/02/87	1068	150 yards east off Echo Point
07/06/87	1070	Divers Point
07/15/87	1070	Tailrace
07/22/87	1069	Tailrace
07/29/87	1070	Tailrace
07/30/87	1070	Tailrace
08/02/87	1070	Divers Point
08/02/87	1071	T-Dike
08/11/87	1068	Tailrace
08/15/87	1072	Caught by angler in tailrace

TAG NO:2246-87

Released on 04-07-87 at Ft. George
LG: 52.0 cm WT: 1.8 kg Sex: F

DATE	RIVER MILE	LOCATION
05/22/87	1022	3/4 miles upstream from Medicine Creek
06/01/87	1023	2 miles upstream from Medicine Creek
07/01/87	1024	2-1/2 miles upstream from Medicine Creek
07/14/87	1024	3-1/2 miles upstream from Medicine Creek
07/23/87	1025	1-1/2 miles downstream from Joe Creek
08/10/87	1024	2-1/2 miles downstream from Joe Creek
08/14/87	1023	3 miles upstream from Medicine Creek
07/08/88	1024	1-3/4 miles downstream Joe Creek
08/09/88	1023	2 miles upstream from Medicine Creek
04/21/89	1062	East end of Hipple Lake
04/25/89	1061	Caught by angler in Hipple Lake

TAG NO:2264

Released on 04-07-87 at Ft. George
LG: - WT: - Sex:

DATE	RIVER MILE	LOCATION
05/25/87	1040	2 miles downstream from DeGrey
05/26/87	1041	Across from DeGrey
06/04/87	1053	1 mile upstream from Stoney Pt.
06/07/87	1071	Tailrace
06/14/87	1071	Tailrace
06/15/87	1071	Tailrace
06/23/87	1071	Tailrace
07/05/87	1071	Tailrace
07/06/87	1071	Tailrace
07/07/87	1071	Tailrace
07/15/87	1071	Tailrace
07/22/87	1071	Tailrace
07/24/87	1071	Tailrace
07/30/87	1071	Tailrace
08/06/87	1071	Tailrace
08/11/87	1058	Farm Island
06/16/88	1070	1/2 mile downstream Oahe Marina
06/20/88	1070	1/2 mile downstream Oahe Marina
07/06/88	1070	1/2 mile downstream Oahe Marina
07/13/88	1070	Diver's Point
07/18/88	1070	1/2 mile downstream Oahe Marina
07/19/88	1070	3/4 mile upstream from Echo Point
08/05/88	1071	Caught by angler in Tailrace

TAG NO:2426

Released on 04-08-87 at Ft. George
LG: 56.0 cm WT: 2.3 kg Sex: -

DATE	RIVER MILE	LOCATION
05/07/87	1058	Straight S. of Cattleman's Club
05/14/87	1042	Across from DeGrey
05/22/87	1019	1 mile downstream from Medicine Creek
07/01/87	1023	2 miles upstream from Medicine Creek
07/06/87	1023	2-1/2 miles upstream from Medicine Creek
07/14/87	1023	2-1/2 miles upstream from Medicine Creek
07/23/87	1048	Ft. George
08/10/87	1048	Ft. George
08/09/88	1022	2 miles upstream from Medicine Creek

TAG NO:2444-87

Released on 04-08-87 at Ft. George
LG: 53.5 cm WT: 2.5 kg Sex: M

DATE	RIVER MILE	LOCATION
04/15/87	1072	Mouth of Stilling Basin
05/07/87	1061	1/2 mile downstream polo field boat ramp
05/20/87	1063	1/4 mile downstream tip of LaFramboise Island
06/03/87	1070	Mouth of Stilling Basin
06/04/87	1070	1 mile north of Echo Point
06/07/87	1070	3/4 mile upstream from Echo Pt.
06/14/87	1070	Downstream from the mouth of Stilling Basin
06/23/87	1070	1/2 way between Echo and Diver's Point
07/05/87	1070	Mid-channel in line with Stilling Basin
07/05/87	1071	Tailrace
07/05/87	1069	Echo Point
07/05/87	1068	Below Echo Point
07/06/87	1068	Straight East of Echo Point channel inlet
07/06/87	1070	1/4 mile downstream from Stilling Basin
07/07/87	1070	In line with Stilling Basin
07/07/87	1070	1/4 mile downstream from Stilling Basin
07/15/87	1071	Tailrace
07/22/87	1071	Tailrace
07/24/87	1072	Tailrace
07/30/87	1069	Tailrace
08/02/87	1070	Tailrace
08/11/87	1070	Tailrace

08/17/87	1065	Off LaFramboise Island
10/30/87	1069	Echo Point
05/25/88	1069	Echo Point
06/02/88	1070	1/2 mile upstream from Echo Pt.
06/08/88	1070	1/2 mile upstream from Echo Pt.
06/16/88	1070	1/2 mile upstream from Echo Pt.
06/22/88	1070	1/2 mile upstream from Echo Pt.
07/06/88	1070	1/2 mile upstream from Echo Pt.
07/18/88	1070	1/2 mile upstream from Echo Pt.
07/19/88	1070	Near Stilling Basin outlet
08/08/88	1069	Straight out from Echo Pt.
08/15/88	1069	Across from Echo Pt., upstream
08/19/88	1069	1/4 mile upstream from Echo Pt.
10/13/88	1070	Mouth of Stilling Basin
10/14/88	1069	300 yds upstream from Echo Pt.
10/18/88	1070	400 yds downstream from Stilling Basin
10/25/88	1070	Mouth of Stilling Basin
10/26/88	1070	Mouth of Stilling Basin
10/28/88	1071	Tailrace
10/31/88	1069	Echo Point
11/02/88	1071	Tailrace
11/03/88	1071	Tailrace
11/07/88	1071	Tailrace
11/09/88	1071	Tailrace
11/10/88	1071	Caught by angler in Tailrace

TAG NO:2237

Released on 06-11-87 at LaFramboise
LG: 47.5 cm WT: 1.1 kg Sex: F

DATE	RIVER MILE	LOCATION
06/12/87	1064	Near Dump Island
06/15/87	1065	1/4 mile off causeway
06/17/87	1064	LaFramboise Lake
06/23/87	1064	LaFramboise Lake Near Dump Island
06/23/87	1064	Near Dump Island
08/07/87	1055	Antelope Creek
08/11/87	1064	LaFramboise Lake
08/17/87	1064	West of Down's Marina
05/13/88	1057	Hipple Lake
08/08/88	1063	300 yds upstream from tip of LaFramboise Island
10/04/88	1060	Hipple Lake
10/12/88	1058	Hipple Lake
10/13/88	1058	Across from Hipple Lake buoys
10/17/88	1060	Hipple Lake
10/18/88	1060	Hipple Lake
10/20/88	1061	Hipple Lake
10/22/88	1057	Across from Hipple buoys
10/31/88	1057	1/2 mile downstream from Hipple Lake buoys
11/02/88	1058	Across from Hipple Lake channel

11/08/88	1058	Farm Island buoys
11/09/88	1058	Across from Hipple Lake buoys
11/22/88	1058	Farm Island marsh

TAG NO:2354

Released on 06-11-87 at LaFramboise
LG: - WT: - Sex: -

DATE	RIVER MILE	LOCATION
06/15/87	1064	1/4 mile downstream of Dump Island
10/07/87	1062	1/2 mile east of LaFramboise Island
10/30/87	1062	1/2 mile east of LaFramboise Island
06/08/88	1062	In eddy above Beaver Island
06/17/88	1062	1/2 mile downstream tip of LaFramboise
06/22/88	1062	In eddy above Beaver Island
06/28/88	1062	In eddy above Beaver Island
07/17/88	1062	1/2 mile downstream tip of LaFramboise
08/08/88	1062	1/2 mile downstream tip of LaFramboise
08/18/88	1062	1/2 mile dowstream LaFramboise

TAG NO:3344

Released on 03-30-88 Stilling Basin
LG: 60.0 cm WT: 2.9 kg Sex: F

DATE	RIVER MILE	LOCATION
03/31/88	1070	Stilling Basin
04/27/88	1069	Upstream from Echo Point
04/27/88	1069	Echo Point
05/13/88	1006	Caught at North Bend

TAG NO:1238

Released on 04-04-88 at Polo Field
LG: 67.3 cm WT: 3.2 kg Sex: F

DATE	RIVER MILE	LOCATION
10/11/88	1019	2 miles downstream Medicine cr.
05/15/89	1019	2 miles downstream Medicine cr.
06/01/89	1019	2 miles downstream Medicine cr.
07/06/89	1019	2 miles downstream Medicine cr.
08/01/89	1019	2 miles downstream Medicine cr.

TAG NO:366

Released on 04-19-88 at Ft. George
LG: 51.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
06/13/88	1014	3 miles upstream from West Bend
08/10/88	1002	7 miles downstream from West Bend
06/02/89	1001	8 miles downstream from West Bend

07/12/89	1002	7 miles downstream from West Bend
07/31/89	1002	7-1/2 miles downstream from West Bend

TAG NO:2435

Released on 04-20-88 at Ft. George
LG: 52.0 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/18/88	1070	Stilling basin
05/19/88	1070	Near stilling basin tubes
06/02/88	1070	Stilling basin
06/08/88	1070	Stilling basin
06/20/88	1069	Straight across from Echo Point
06/22/88	1069	Echo Point
06/27/88	1070	Straight out from stilling basin
07/19/88	1070	1 mile upstream Echo Point
08/15/88	1070	Under stilling basin bridge
08/19/88	1070	Foggy Bottom
10/14/88	1070	Mouth of stilling basin
10/18/88	1070	300 yds downstream from stilling basin
10/20/88	1070	300 yds downstream from stilling basin
10/25/88	1055	Antelope Creek
10/26/88	1055	Antelope Creek
10/31/88	1055	Antelope Creek
11/02/88	1055	Antelope Creek
11/08/88	1055	Antelope Creek
05/02/89	1053	2 miles upstream from Medicine Knoll Creek
05/04/89	1055	Antelope Creek
05/10/89	1060	Across from tin shed
05/30/89	1070	Stilling Basin
05/31/89	1070	Stilling Basin
06/04/89	1072	Tailrace
06/09/89	1069	Echo Point
06/18/89	1070	Sand bar along Foggy Bottom
06/20/89	1070	Diver's Point
06/22/89	1070	Stilling Basin
06/26/89	1070	Foggy Bottom
06/29/89	1070	Stilling Basin
07/03/89	1070	Stilling Basin
07/10/89	1070	Foggy Bottom
07/21/89	1070	Foggy Bottom
07/24/89	1070	Foggy Bottom
07/26/89	1070	Foggy Bottom
07/31/89	1070	Foggy Bottom
08/02/89	1070	Foggy Bottom
08/07/89	1070	Foggy Bottom
08/25/89	1070	Foggy Bottom
08/28/89	1070	Foggy Bottom
09/12/89	1070	Mouth of Stilling Basin

09/18/89	1069	Echo Point
09/27/89	1070	Foggy Bottom
10/02/89	1070	Between Echo Pt. and Diver's Pt.
10/10/89	1069	Echo Point
11/02/89	1069	Echo Point
11/30/89	1056	Upper end of Antelope Creek
04/19/90	1043	1 mile upstream from DeGrey
05/10/90	1059	Along Farm Island
05/30/90	1060	Beaver Island
06/05/90	1068	Echo Point
06/14/90	1069	Tailrace
06/19/90	1073	Tailrace
06/25/90	1072	Stilling Basin
07/09/90	1072	Foggy Bottom
08/07/90	1072	Foggy Bottom
08/17/90	1072	Echo Point
06/20/91	1069	Echo Point
07/31/91	1069	Foggy Bottom
10/06/91	1055	Antelope Creek
10/16/91	1054	Downstream end of Antelope Creek

TAG NO:348-88A

Released on 04-22-88 at Ft.George
LG: 54.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
08/09/88	1040	2 miles downstream from DeGrey
09/29/88	980	Caught by angler below Big Bend

TAG NO:339-88

Released on 04-28-88 at Ft. George
LG: 47.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/13/88	1057	3/4 mile upstream buoys-Hipple
06/15/88	1030	2 miles downstream from Cedar Creek
08/09/88	1030	2 miles downstream from Cedar Creek
10/11/88	1033	5 miles upstream from Cedar Creek
10/11/88	1033	5 miles upstream from Cedar Creek
05/07/89	1065	Caught by angler Laframboise causeway

TAG NO:375

Released on 04-28-88 at Ft.George
LG: 58.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
07/08/88	1038	4 miles downstream from DeGrey
08/09/88	1037	5 miles downstream from DeGrey
04/22/89		Caught by angler

TAG NO:2534-88

Released on 04-29-88 At Ft. George
LG: 54.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/11/88	1037	5 miles downstream from DeGrey
05/04/89	1051	1 mile upstream from Medicine Knoll Creek

TAG NO:2543

Released on 04-29-88 at Ft. George
LG:58.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/13/88	1061	Hipple Lake in Crappie Hole
06/17/88	1056	1-1/2 miles downstream at Hipple Lake
07/04/88	1055	Straight from Farm Island buoys
07/18/88	1055	Straight from Farm Island buoys
08/08/88	1058	Straight from Farm Island buoys
08/18/88	1058	Straight from Farm Island buoys
10/04/88	1058	Farm Island buoys
10/31/88	1062	3 miles downstream from Bad River
11/01/88	1069	Echo Point
11/02/88	1071	Tailrace, T-Dike, West Side
11/03/88	1071	Tailrace
11/09/88	1058	Farm Island buoys
04/05/89	1054	1 mile downstream from Antelope Creek
05/09/89	1054	3/4 mile downstream from Antelope Creek

TAG NO:2633

Released on 04-29-88 at Ft. George
LG: 46.0 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/13/88	1057	Hipple Lake
08/09/88	1040	2 miles downstream from DeGrey
08/15/88	1043	Upstream from DeGrey boat ramp
05/10/89	1062	Beaver Island
06/01/89	1037	5 miles downstream from DeGrey
06/23/89	1036	3 miles upstream from Cedar Creek
07/28/89	1038	4 miles downstream from DeGrey
08/03/89	1038	4 miles downstream from DeGrey
08/10/89	1035	2-1/2 miles upstream from Cedar Creek
09/25/89	1040	2 miles downstream from DeGrey
10/17/89	1043	1 mile upstream from DeGrey
10/24/89	1057	Inside Farm Island marsh
10/30/89	1057	Along Farm Island marsh
11/02/89	1056	Along Farm Island marsh
11/06/89	1058	Along Farm Island marsh

11/30/89	1046	2-1/2 miles downstream from Ft. George
01/08/90	1051	Medicine Knoll Creek
04/19/90	1048	Ft. George
05/03/90	1056	Antelope Creek
05/21/90	1028	2 miles upstream from Joe Creek
06/06/90	1039	3 miles downstream from DeGrey
06/25/90	1037	5 miles downstream from DeGrey
06/26/90	1037	5-1/2 miles downstream from DeGrey
07/05/90	1034	1-1/2 miles upstream from Cedar Creek
07/10/90	1037	5-1/2 miles downstream from DeGrey
08/06/90	1043	DeGrey
08/14/90	1038	4-1/2 miles downstream from DeGrey
06/20/91	1040	Downstream from DeGrey
06/26/91	1039	Downstream from DeGrey
07/09/91	1043	Upstream from DeGrey
07/10/91	1042	Out from DeGrey Bridge
07/16/91	1036	5-1/2 miles downstream from DeGrey
07/30/91	1037	4-1/2 miles downstream from DeGrey
07/31/91	1038	4 miles downstream from DeGrey
08/08/91	1041	DeGrey
09/08/91	1039	2 miles downstream from DeGrey
10/06/91	1056	Farm Island marsh
10/16/91	1056	Farm Island marsh

TAG NO:2228-88

Released on 05-13-88 at Hipple Lake
LG: WT: 3.6 kg Sex: F

DATE	RIVER MILE	LOCATION
08/09/88	1032	Near Cedar Creek
10/11/88	1034	3 miles upstream from Cedar Ck.
06/01/88	1031	Downstream from Cedar Creek
06/23/89	1032	1 mile below Cedar Creek
08/03/89	1032	1 mile down from Cedar Creek
08/10/89	1032	1 mile down from Cedar Creek
09/25/89	1032	Cedar Creek
10/18/89	1032	1 mile below Cedar Creek
06/26/90	1032	Cedar Creek

TAG NO:2453-88

Released on 05-24-88 at Farm Island
LG: - WT: - Sex: -

DATE	RIVER MILE	LOCATION
06/10/88	1057	1/2 mile downstream from Farm Island boat channel
06/15/88	1042	1/2 mile downstream Degrey
06/16/88	1042	1/2 mile downstream Degrey

08/09/88	1041	1 mile downstream from DeGrey
10/06/88	1058	Across from Hipple inlet
10/13/88	1058	Across from Farm Island buoys
10/18/88	1060	South side of Hipple Lake
10/18/88	1058	Across from Hipple inlet
10/20/88	1060	Behind Girl Scout Cabin
10/25/88	1060	Behind Girl Scout Cabin
10/26/88	1058	Across from Hipple inlet
10/26/88	1060	Behind Girl Scout Cabin
10/31/88	1056	End, Farm Island marsh
11/08/88	1057	Farm Island marsh (channel)
11/09/88	1058	Farm Island marsh
11/24/88	1056	Across from Farm Island Marsh
04/04/89	1060	Hipple Lake
04/21/89	1056	1 mile upstream from Antelope Creek
05/10/89	1058	Across from Hipple Lake channel
07/28/89	1043	1/2 mile upstream from DeGrey
08/04/89	1041	1 mile downstream from DeGrey
08/10/89	1041	1 mile downstream from DeGrey
10/03/89	1060	Hipple Lake, along the causeway
10/12/89	1057	Along Farm Island marsh
10/19/89	1061	Hipple Lake, along the causeway
10/24/89	1057	Along Farm Island marsh
10/30/89	1057	Along Farm Island marsh
11/02/89	1057	Along Farm Island marsh
11/06/89	1057	Along Farm Island marsh
11/30/89	1058	Along Farm Island marsh
01/08/90	1058	Across from Hipple Lake channel
01/22/90	1058	1/2 mile upstream from Hipple Lake channel
03/29/90	1058	1/4 mile upstream from Hipple Lake channel
04/20/90	1056	Farm Island marsh area
05/08/90	1058	Along Farm Island
05/10/90	1058	Out from Hipple Lake channel
06/04/90	1060	Along Farm Island
06/05/90	1064	Along Farm Island
07/05/90	1041	DeGrey
07/10/90	1041	DeGrey
07/16/90	1042	DeGrey
08/13/90	1054	Downstream from Antelope Island
08/20/90	1056	End of Farm Island marsh

TAG NO:2226

Released on 10-05-88 at Tailrace
LG: 66.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/31/88	1071	Middle of tailrace
11/02/88	1071	Near Diver's point
11/03/88	1072	Near T-dike
11/08/88	1072	Near T-dike
11/09/88	1072	Near T-dike

11/10/88	1072	Near T-dike
11/12/88	1071	Near Diver's point
11/17/88	1071	Across from Diver's point
11/21/88	1070	Downstream from Stilling Basin
11/25/88	1072	Near Marina entrance
12/14/88	1072	Tailrace
12/17/88	1072	Across from T-dike
03/28/89	1070	Under the ice in Stilling Basin
03/30/89	1070	Under the ice in Stilling Basin
03/31/89	1070	Under the ice in Stilling Basin
04/04/89	1070	Under the ice in Stilling Basin
05/03/89	1070	Stilling Basin
05/09/89	1069	Echo Point
05/16/89	1072	Tailrace
05/30/89	1072	Tailrace
05/31/89	1072	Tailrace
06/02/89	1072	Across from T-dike
06/04/89	1072	Tailrace
06/06/89	1072	Tailrace
06/09/89	1072	Tailrace
06/15/89	1072	Tailrace
06/18/89	1072	Tailrace
06/19/89	1072	Tailrace
06/20/89	1072	Tailrace
06/22/89	1072	Tailrace
06/26/89	1072	Tailrace
06/29/89	1072	Tailrace
07/06/89	1072	Tailrace
07/10/89	1072	Tailrace
07/13/89	1070	Diver's point
07/19/89	1072	Tailrace
07/24/89	1072	Tailrace
07/26/89	1072	Tailrace
07/31/89	1072	Tailrace
08/01/89	1072	Tailrace
08/07/89	1072	Tailrace
08/25/89	1072	Tailrace
08/28/89	1072	Tailrace
09/16/89	1072	Caught by angler in Tailrace

TAG NO:2235-88

Released on 10-25-88 at Echo Point
LG: 48.3 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/31/88	1068	downstream from Echo Point
11/01/88	1068	Echo Point
05/17/89	1044	2 miles upstream from DeGrey
06/01/89	1046	Sand Creek
06/04/89	1072	Tailrace
06/15/89	1072	Tailrace
06/22/89	1072	Tailrace
06/26/89	1072	Tailrace
07/03/89	1070	Stilling Basin

07/10/89	1070	Stilling Basin
07/13/89	1070	Mouth of Stilling Basin
07/21/89	1072	Tailrace
07/24/89	1070	Stilling Basin
07/31/89	1072	Tailrace
08/07/89	1072	Tailrace
08/16/89	1072	Caught by angler in Tailrace

TAG NO:2273-88

Released on 10-25-88 at Tailrace
LG: 55.9 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
11/17/88	1072	Tailrace
11/22/88	1054	Antelope Creek
04/05/89	1043	1 mile upstream from DeGrey
04/19/89	1048	Ft. George boat landing
05/03/89	1068	Thompson's Point
05/31/89	1072	Tailrace
06/04/89	1072	Tailrace
06/06/89	1072	Tailrace
06/09/89	1072	Tailrace
06/15/89	1072	Tailrace
06/18/89	1072	Tailrace
06/19/89	1072	Tailrace
06/20/89	1072	Tailrace
06/22/89	1072	Tailrace
06/29/89	1072	Tailrace
06/30/89	1072	Tailrace
07/03/89	1072	Tailrace
07/10/89	1070	Tailrace
07/13/89	1070	Tailrace
07/21/89	1072	Tailrace
07/24/89	1072	Tailrace
07/26/89	1072	Tailrace
07/31/89	1070	Tailrace
08/01/89	1072	Tailrace
08/07/89	1072	Tailrace
08/25/89	1072	Tailrace
08/28/89	1072	Tailrace
09/12/89	1072	Tailrace
09/18/89	1072	Tailrace
09/19/89	1072	Tailrace
10/02/89	1070	Tailrace
10/19/89	1072	Tailrace
11/02/89	1070	Tailrace
11/06/89	1058	Along Farm Island marsh
05/21/90	1067	Pierre Bridges
06/01/90	1072	Tailrace
06/04/90	1072	Tailrace
06/05/90	1072	Tailrace
06/07/90	1072	Tailrace
06/09/90	1072	Tailrace
06/11/90	1072	Caught by angler in Tailrace

TAG NO:3333-88

Released on 10-25-88 in the Tailrace
LG: 62.2 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/28/88	1068	Echo Point
11/01/88	1068	Echo Point
11/02/88	1070	Between Echo & Divers Point
11/07/88	1071	Tailrace
11/08/88	1071	Tailrace
11/09/88	1071	Tailrace
11/10/88	1072	Tailrace
11/21/88	1072	Tailrace
11/25/88	1072	Tailrace
12/29/88	1072	Tailrace
01/17/89	1072	Tailrace, across from T-Dike
01/20/89	1072	Tailrace, across from T-Dike
03/15/89	1072	Tailrace, across from T-Dike
03/22/89	1072	Tailrace, across from T-Dike
03/23/89	1072	Tailrace, across from T-Dike
04/21/89	1049	Across from Ft. George
05/02/89	1050	Near Medicine Knoll Creek
05/10/89	1063	Laframboise Channel
05/16/89	1072	Tailrace, across from T-Dike
05/18/89	1072	Tailrace, across from T-Dike
05/20/89	1072	Tailrace, across from T-Dike
05/22/89	1072	Tailrace
05/30/89	1072	Tailrace
05/31/89	1070	Stilling Basin
06/02/89	1070	Upper end of Stilling Basin
06/06/89	1070	Upper end of Stilling Basin
06/15/89	1070	Stilling Basin
06/18/89	1070	Stilling Basin
06/20/89	1070	End of Stilling Basin
06/22/89	1070	End of Stilling Basin
06/26/89	1070	Stilling Basin
06/29/89	1070	Stilling Basin
07/10/89	1072	Tailrace
07/13/89	1070	Divers Point
07/19/89	1070	Stilling Basin
07/24/89	1070	Stilling Basin
07/26/89	1070	Stilling Basin
07/26/89	1070	Stilling Basin
08/07/89	1072	Tailrace
08/16/89	1072	Tailrace
08/16/89	1072	Caught in Tailrace

TAG NO:348-88B

Released on 10-25-88 at Tailrace
LG: 54.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
11/08/88	1058	Marina Pond
05/15/89	1010	Caught by angler at West Bend

TAG NO:5322-88

Released on 10-25-88 at Tailrace
LG: 52.1 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/31/88	1071	Tailrace
11/01/88	1067	1/2 mile upstream from R.R. bridge
11/02/88	1066	Near R.R. bridge
11/22/88	1048	Fort George area
11/08/88	1057	Across from Farm Island marsh
11/09/88	1057	Across from Farm Island marsh
05/08/89	1059	Tin shed
05/30/89	1072	Bay behind Oahe Marina
05/31/89	1072	Bay below sub-impoundment
06/04/89	1072	Tailrace
06/06/89	1072	Marina Pond
06/09/89	1072	In bay below sub-impoundment
06/18/89	1070	Mouth of Stilling Basin
06/20/89	1072	Tailrace
06/22/89	1072	Tailrace
06/26/89	1072	Tailrace
06/29/89	1072	Tailrace
06/30/89	1072	Tailrace
07/03/89	1072	Tailrace
07/11/89	1070	Stilling Basin
07/13/89	1072	Tailrace
07/19/89	1072	Tailrace
07/21/89	1072	Tailrace
07/21/89	1072	Caught by angler in the Tailrace

TAG NO:2442-88

Released on 10-26-88 at Ft. George
LG: 52.1 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
10/28/88	1072	Tailrace
10/28/88	1072	Marina Pond
11/01/88	1072	Tailrace
11/02/88	1072	Tailrace
11/03/88	1072	Tailrace
11/07/88	1072	Tailrace, end of upper T-dike
11/08/88	1072	Just outside of Marina Pond
11/09/88	1072	Tailrace
11/10/88	1072	Tailrace
11/12/88	1072	Tailrace
11/17/88	1072	Tailrace
11/21/88	1072	Tailrace
11/25/88	1072	Tailrace
12/14/88	1072	Tailrace
12/17/88	1072	Tailrace
12/29/88	1072	Tailrace
01/05/89	1072	Tailrace
01/17/89	1072	Tailrace

01/20/89	1072	Tailrace
03/15/89	1072	Tailrace
03/22/89	1072	Tailrace
03/23/89	1072	Tailrace, east side
03/30/89	1070	Stilling Basin
03/31/89	1070	Stilling Basin
04/04/89	1070	Stilling Basin
05/02/89	1050	Medicine Knoll Creek
05/09/89	1071	Foggy Bottom
05/16/89	1072	Below sub-impoundment tailrace
05/18/89	1072	Marina Pond
05/27/89	1072	Caught by angler in Tailrace

TAG NO:339-89

Released on 04-19-89 at Ft. George
LG: 53.3 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
04/21/89	1052	2 miles upstream from Medicine Knoll Creek
05/09/89	1043	1-1/2 miles upstream from DeGrey
06/01/89	1034	1-1/2 miles upstream from Cedar Creek
08/03/89	1037	5 miles downstream from DeGrey
08/10/89	1036	3 miles upstream from Cedar Creek
09/25/89	1041	1 mile downstream from DeGrey
10/17/89	1041	1-1/2 miles downstream from DeGrey
03/31/90	1040	2 miles downstream from DeGrey
04/19/90	1053	1 mile downstream from Antelope Creek
05/04/90	1042	DeGrey
06/06/90	1036	5-1/2 miles downstream from DeGrey
06/14/90	1035	Cedar Creek

TAG NO:3342

Released on 04-19-89 Ft. George
LG: 53.3 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/02/89	1055	Antelope Creek
05/09/89	1056	1/2 mile upstream from Antelope
05/17/89	1043	1 mile upstream from DeGrey
06/01/89	1032	Mouth of Cedar Creek
06/23/89	1036	3 miles upstream from Cedar Creek
07/28/89	1039	4 miles downstream from DeGrey
08/03/89	1039	4 miles downstream from DeGrey
08/04/89	1039	4 miles downstream from DeGrey
08/10/89	1037	5 miles downstream from Degrey
09/13/89	1042	Caught at DeGrey

TAG NO:357-89

Released on 04-19-89 at Ft. George
LG: 55.9 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/15/89	1018	2 miles downstream from Joe Creek
06/02/89	1012	3 miles upstream fom West Bend
05/10/89	1026	Caught at Joe Creek

TAG NO:456-89

Released on 04-20-89 at Ft. George
LG: 58.4 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/16/89	1069	Echo Point
05/30/89	1070	Mouth of Stilling Basin
06/02/89	1070	Tailrace, out from Beach area
06/04/89	1070	Mouth of Stilling Basin
06/06/89	1072	Tailrace

TAG NO:97-89

Released on 04-24-89 at Ft. George
LG: 57.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/02/89	1050	1/2 miles downstream from Medicine Knoll Creek
06/01/89	1032	1 mile downstream from Cedar Creek
06/01/89	1033	Caught at Cedar Creek

TAG NO:258

Released on 04-24-89 at Ft. George
LG: 59.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
06/01/89	1033	3/4 mile upstream from Cedar Creek
06/23/89	1033	Cedar Creek
08/03/89	1024	Cedar Creek
08/10/89	1033	Cedar Creek
09/25/89	1033	1 mile upstream from Cedar Creek
10/18/89	1033	Cedar Creek
05/21/90	1033	Cedar Creek
06/06/90	1033	Cedar Creek
06/11/90	1014	4 mile upstream from West Bend

TAG NO:267

Released on 04-24-89 at Ft. George
LG: 61.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1036	4 miles upstream from Cedar cr.
08/03/89	1029	4-1/2 miles downstream from Cedar Creek
09/25/89	1030	2 miles downstream from Cedar Creek

09/29/89	1030	2 miles downstream from Cedar Creek
10/18/89	1029	2 miles upstream from Joe Creek
03/27/90	1049	1 mile upstream from Ft. George
03/29/90	1057	Along Farm Island marsh
05/21/90	1029	3 miles upstream from Joe Creek
05/20/90	1063	Down's Marina

TAG NO:276

Released on 04-24-89 at Ft. George
LG: 53.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1033	Cedar Creek

TAG NO:285

Released on 04-24-89 at Ft. George
LG: 65.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1044	2 miles upstream from DeGrey
06/01/89	1012	2 miles upstream from West Bend
07/06/89	1015	5 miles downstream from Medicine Creek
07/12/89	1016	4 miles downstream from Medicine Creek
08/01/89	1016	4 miles downstream from Medicine Creek
09/29/89	1016	4 miles downstream from Medicine Creek
06/18/90	1014	6 miles downstream from Medicine Creek
07/16/90	1017	7 miles upstream from West Bend

TAG NO:384

Released on 04-24-89 at Fort George
LG: 52.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
08/01/89	1015	6 miles below Medicine Creek
06/30/90	980	Fort Thompson, in Tailrace

TAG NO:447

Released on 04-24-89 at Ft. George
LG: 54.0 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/09/89	1055	Antelope Creek
06/02/89	1010	West Bend
07/12/89	1013	2 miles upstream from West Bend
09/25/89	1039	3-1/2 miles downstream from DeGrey
10/17/89	1046	Sand Creek
11/06/89	1050	Near Medicine Knoll Bridge
11/30/89	1051	1/2 mile downstream from Medicine Knoll Creek

12/05/89	1048	1 mile downstream from Ft. George
01/08/90	1050	1 mile downstream from Ft. George
04/19/90	1049	1 mile upstream from Ft. George
05/10/90	1054	Antelope Creek
06/09/90	1010	Caught by angler at West Bend

TAG NO:465-89

Released on 04-24-89 at Ft. George
LG: 53.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1040	2-1/2 miles downstream from DeGrey

TAG NO:3434

Released on 04-24-89 at Ft. George
LG: 50.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1042	DeGrey
06/01/89	1032	1 mile downstream from Cedar Creek
06/23/89	1031	2 miles downstream from Cedar Creek
08/03/89	1032	1-1/2 miles downstream from Cedar Creek
08/10/89	1032	1 mile downstream from Cedar Creek
09/25/89	1033	Cedar Creek
09/29/89	1031	2 miles downstream from Cedar Creek
10/18/89	1032	1 mile downstream from Cedar Creek
05/21/90	1033	Cedar Creek
06/14/90	1033	Cedar Creek
06/26/90	1033	Cedar Creek
07/10/90	1033	Cedar Creek
07/12/90	1032	1-1/2 miles downstream from Cedar Creek

TAG NO:88

Released on 04-25-89 at Ft. George
LG: 52.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1050	1 mile upstream from Ft. George
06/01/89	1051	Medicine Knoll Creek
06/23/89	1041	DeGrey
08/03/89	1039	4 miles downstream from DeGrey
08/04/89	1039	4 miles downstream from DeGrey
08/10/89	1038	4-1/2 miles downstream from DeGrey
10/17/89	1046	Sand Creek
12/05/89	1046	Sand Creek

01/08/90	1046	Sand Creek
01/08/90	1045	1 mile downstream from Sand Creek
03/20/90	1048	1/4 mile downstream from Ft. George
03/27/90	1047	1 mile downstream from Ft. George
04/13/90	1046	2 miles downstream from Ft. George
04/19/90	1048	Ft. George
05/10/90	1054	Antelope Creek
05/21/90	1054	Antelope Creek
06/06/90	1044	1-1/2 miles downstream from Sand Creek
06/14/90	1035	2-1/2 miles upstream from Cedar Creek

TAG NO:3335

Released on 04-25-89 Ft. George
LG: 46.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/02/89	1051	Medicine Knoll Creek
05/09/89	1047	1 mile downstream from Ft. George
06/01/89	1020	Medicine Creek
07/06/89	1021	Medicine Creek
09/29/89	1020	Medicine Creek
05/11/90	1066	Caught at Bridges in Pierre

TAG NO:375

Released on 05-19-89 at Tailrace
LG: 52.0 cm WT: 1.7 kg Sex: F

DATE	RIVER MILE	LOCATION
05/30/89	1070	Stilling Basin
05/31/89	1072	Stilling Basin
06/06/89	1070	Stilling Basin
06/07/89	1072	Tailrace
04/21/90	1052	1 mile upstream from Medicine Knoll Creek

TAG NO:249

Released on 05-25-89 At Ft. George
LG: 52.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/09/89	1043	1.5 miles upstream from DeGrey
06/01/89	1046	At Sand Creek
06/06/89	1045	At Sand Creek
06/22/89	1045	At Sand Creek
08/10/89	1042	DeGrey
10/17/89	1044	2 miles upstream from DeGrey
11/06/89	1048	Ft. George

11/30/89	1051	1 mile upstream from Medicine Knoll Creek
12/05/89	1051	Medicine Knoll Creek
01/08/90	1046	Sand Creek
03/20/90	1047	1/4 mile upstream from Ft. George
03/27/90	1047	1 mile downstream from Ft. George
03/29/90	1046	2 miles downstream from Ft. George
04/19/90	1042	DeGrey

TAG NO:2246-89

Released on 06-30-89 at Tailrace
LG: 53.0 cm WT: Sex:

DATE	RIVER MILE	LOCATION
07/03/89	1070	Stilling Basin
07/10/89	1070	Stilling Basin
07/12/89	1070	Stilling Basin
07/12/89	1070	Caught by angler in Stilling Basin

TAG NO:2534-89

Released on 06-30-89 At Tailrace
LG: 50.0 cm WT: - Sex: -

DATE	RIVER MILE	LOCATION
07/03/89	1072	Marina Pond
07/10/89	1070	Stilling Basin
07/13/89	1070	Stilling Basin
07/19/89	1070	Stilling Basin
07/24/89	1070	Stilling Basin
07/26/89	1070	Stilling Basin
07/31/89	1072	Tailrace
08/02/89	1070	Stilling Basin
08/07/89	1072	Tailrace
09/12/89	1072	Tailrace-end of the T-Dike
09/18/89	1072	Tailrace-end of the T-Dike
10/02/89	1072	Tailrace
10/10/89	1072	Tailrace
10/19/89	1072	Tailrace-end of the T-Dike
11/02/89	1072	Tailrace
11/07/89	1072	Tailrace
11/30/89	1057	Along Farm Island Marsh
01/08/90	1054	Downstream end of Antelope Creek
01/22/90	1056	Antelope Creek
03/19/90	1054	Downstream end of Antelope Creek
03/29/90	1053	1 mile downstream from Antelope Creek
04/19/90	1055	Antelope Creek
05/10/90	1055	Antelope Creek
06/01/90	1072	Diver's Point
06/14/90	1072	Tailrace
06/19/90	1072	Tailrace

06/25/90	1072	End of Stilling Basin
07/03/90	1072	End of Stilling Basin
07/09/90	1072	At Tailrace-T-Dike
07/11/90	1072	Tailrace
07/12/90	1072	Tailrace
07/16/90	1072	Tailrace
07/18/90	1072	Tailrace, fast water
07/24/90	1072	Tailrace
09/04/90	1072	Tailrace
10/22/90	1072	Caught at the Tailrace

TAG NO:97-90

Released on 04-26-90 at Ft. George
LG: - WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/04/90	1041	DeGrey
05/21/90	1030	2 miles downstream from Cedar Creek
06/26/90	1030	2-1/2 miles downstream from Cedar Creek
07/10/90	1030	2 miles downstream from Cedar Creek
07/12/90	1031	2-1/2 miles downstream from Cedar Creek
08/06/90	1030	2 miles downstream from Cedar Creek
08/09/90	1030	2 miles downstream from Cedar Creek

TAG NO:348-90

Released on 04-26-90 at Fort George
LG: 56.0 WT: 2.2 kg Sex: F

DATE	RIVER MILE	LOCATION
05/21/90	1029	2-1/2 miles upstream from Joe Creek
06/26/90	1028	2 miles upstream from Joe Creek
07/12/90	1028	2 miles upstream from Joe Creek
07/17/90	1028	2 miles upstream from Joe Creek
08/09/90	1029	2 miles upstream from Joe Creek
08/30/90	1028	2 miles upstream from Joe Creek

TAG NO:357-90

Released on 04-26-90 at Ft. George
LG: 58.5 cm WT: 1.8 kg Sex: F

DATE	RIVER MILE	LOCATION
07/12/90	1027	2 miles upstream from Joe Creek
07/19/90	1027	2 miles upstream from Joe Creek
08/09/90	1027	Joe Creek
08/30/90	1027	Joe Creek

TAG NO:456-90

Released on 04-26-90 at Ft. George
LG:47.8 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
06/11/90	1026	Joe Creek
06/26/90	1026	Joe Creek
07/12/90	1026	Joe Creek
07/19/90	1026	Joe Creek
08/09/90	1026	Joe Creek
08/28/90	1026	Joe Creek

TAG NO:465-90

Released on 04-26-90 at Ft. George
LG:46.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/21/90	1039	3 miles downstream from DeGrey
05/29/90	1070	End of Stilling Basin
05/30/90	1070	Stilling Basin
05/30/90	1070	Caught in the Stilling Basin

TAG NO:2442-90

Released on 04-26-90 at Ft. George
LG:47.5 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/21/90	1037	5-1/2 miles downstream from DeGrey
06/06/90	1032	Cedar Creek
06/06/90	1036	5 miles downstream from DeGrey
07/05/90	1034	7 miles downstream from DeGrey
07/10/90	1032	Cedar Creek
07/12/90	1033	Mouth of Cedar Creek
08/06/90	1032	Cedar Creek
08/14/90	1040	2.5 miles below DeGrey
09/08/90	1034	1.5 miles up from Cedar Creek
10/06/90	1045	Caught by angler at Sand Creek

TAG NO:2226-90

Released on 05-09-90 at LaFramboise
LG: 50.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/10/90	1073	Tailrace
05/21/90	1029	3 miles upstream from Joe Creek
06/18/90	1011	2 miles upstream from West Bend
07/16/90	1011	2 miles upstream from West Bend

TAG NO:2235-90

Released on 05/09/90 at the Tailrace
LG: 50.0 cm WT: Sex: F

DATE	RIVER MILE	LOCATION
05/10/90	1072	Tailrace

TAG NO:5322-90

Released on 05-09-90 at Tailrace
LG: - WT: - Sex: F

DATE	RIVER MILE	LOCATION
05/10/90	1072	Marina Pond
06/01/90	1072	Marina Pond
06/04/90	1072	Marina Pond
06/07/90	1072	Tailrace
06/11/90	1072	Tailrace
06/25/90	1061	Beaver Island
06/26/90	1061	Laframboise area
07/19/90	1064	Laframboise Lagoon
08/13/90	1061	Beaver Island
09/12/90	1064	Laframboise Lagoon

TAG NO:3333-90

Released on 05-10-90 in the Tailrace
LG: 53.5 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/10/90	1072	Tailrace
05/21/90	1067	Bridges in Pierre
06/05/90	1068	Echo Point
06/11/90	1072	Tailrace
06/14/90	1072	Tailrace
06/19/90	1072	Tailrace
06/07/90	1072	Tailrace
06/19/90	1072	Caught in the Tailrace

TAG NO:2246-90

Released on 05-16-90 at Stilling Basin
LG:48.0 cm WT: - Sex: M

DATE	RIVER MILE	LOCATION
05/29/90	1072	End of Stilling Basin
06/04/90	1072	Back end of Stilling Basin
06/07/90	1072	End of Stilling Basin
06/19/90	1072	Tailrace
06/25/90	1070	Tailrace-between Diver's and Echo Point
07/03/90	1072	Stilling Basin
07/09/90	1071	Tailrace-up from Divers Point
07/11/90	1072	Trailrace-end of T-Dike
07/12/90	1072	Tailrace
07/16/90	1072	Tailrace
07/19/90	1071	Tailrace-Diver's Point
07/24/90	1072	Tailrace
08/07/90	1072	Tailrace
08/17/90	1072	Tailrace
09/04/90	1072	Tailrace
10/22/90	1072	Tailrace
06/20/91	1070	Diver's Point

TAG NO:374

Released on 05-23-90 at DeGrey
LG: 52.0 cm WT: - Sex: F

DATE	RIVER MILE	LOCATION
06/11/90	1024	2 miles downstream from Joe Creek
06/26/90	1024	2 miles downstream from Joe Creek
07/12/90	1024	2 miles downstream from Joe Creek
08/09/90	1024	2-1/2 miles downstream from Joe Creek
08/28/90	1024	Joe Creek

Appendix B. Relocation records of walleyes implanted with sonic transmitters in Lake Francis Case.

TAG NO:88

Released on 05-04-88 at American Creek
LG: 54.5cm WT: 1.4kg Sex: M

DATE	RIVER MILE	LOCATION
05/10/88	971	across from Kiowa, east shore
06/13/88	900	across from Whetstone Creek
06/24/88	900	across from Whetstone Creek
07/25/88	900	1/2 mile south Whetstone, 100 yds from west shore
08/22/88	897	3 miles south of Whetstone Creek
09/01/88	897	North Scalp Creek bay
04/19/89	966	west end of I-90 causeway
04/23/89	966	caught by angler, I-90 causeway

TAG NO:97

Released on 05-04-88 at American Creek
LG: 52.5cm WT: 1.3kg Sex: M

DATE	RIVER MILE	LOCATION
no contact ever made		

TAG NO:357

Released on 04-13-88 at American Creek
LG: 56.0cm WT: 1.6kg Sex: F

DATE	RIVER MILE	LOCATION
04/18/88	968	100 yds north, offshore of West Park boat ramp
04/27/88	968	200 yds north, offshore of West Park boat ramp
05/04/88	968	1/4 mile north, offshore of West Park boat ramp
06/06/88	881	caught by angler near Ft.Randall Dam

TAG NO:384

Released on 04-19-88 at American Creek
LG: 54.5cm WT: 1.5kg Sex: M

DATE	RIVER MILE	LOCATION
04/27/88	966	Dredge Hole
05/26/88	923	east side, across from Buryanek

TAG NO:447

Released on 04-08-88 at American Creek
LG: 58.0cm WT: 1.9kg Sex: M

DATE	RIVER MILE	LOCATION
04/18/88	967	north side Hwy 16 causeway
04/28/88	978	caught by angler, released Am. Cr.
05/10/88	967	pontoon bay, 100 yds off shore
05/15/88	967	100 yds south of Hwy 16 causeway
05/24/88	960	200 yds off shore, Carpenter bluffs
06/22/88	960	Carpenter bluffs, 1/2 mile before bend
07/04/88	960	caught by angler, Carpenter bluffs

TAG NO:456

Released on 04-13-88 at American Creek
LG: 61.0cm WT: 2.2kg Sex: F

DATE	RIVER MILE	LOCATION
04/18/88	962	1/4 mile north of Dude Ranch
04/27/88	954	across from Bull Creek
05/05/88	952	north bank (west side) of Waterhole Creek
06/15/88	933	1 mile north of Landing Creek
06/27/88	930	300 yds outside of Rush Creek bay
07/08/88	927	1 mile north of Red Rock, 20 yds off west shore
07/21/88	925	1/2 mile south of Turgeon Well, mid river
08/04/88	923	100 yds out of Buryanek bay
08/18/88	924	200 yds from east shore, 2 miles south of Red Rock
09/27/88	925	1/2 mile south of Turgeon Well, east side of channel
10/06/88	924	1 1/2 mile south Red Rock, west side
04/21/89	954	caught by GF&P sonic tagging crew - re-implanted with sonic tag no:22234

TAG NO:465

Released on 04-13-88 at American Creek
LG: 64.0cm WT: 2.7kg Sex: F

DATE	RIVER MILE	LOCATION
04/18/88	962	1/2 mile north of Dude Ranch
05/26/88	927	first bay on west side, north of Red Rock
06/28/88	921	1/4 mile north of Hwy 44 bridge, mid channel
08/22/88	900	200 yds offshore, just out of Whetstone Creek
05/30/89	926	caught by angler, Red Rock

TAG NO:555

Released on 04-13-88 at American Creek
LG: 55.0cm WT: 1.62kg Sex: M

DATE	RIVER MILE	LOCATION
06/13/88	911	1 mile south of Platte Creek, mid river
06/30/88	909	3 miles south of Platte Creek, east side
07/22/88	912	200 yds off shore, south of mouth of Platte Creek
07/25/88	912	200 yds off shore, south of mouth of Platte Creek
07/27/88	910	2 miles south of Platte Creek, 200 yds off east shore
08/05/88	912	200 yds north of Platte Creek, 150 yds off east shore
08/19/88	910	2 miles south of Platte Creek, 200 yds off west shore
08/22/88	910	2 miles south of Platte Creek, mid river
09/01/88	910	2 miles south of Platte Creek, mid river
06/24/89	881	caught by angler, near North Point

TAG NO:1229

Released on 04-13-88 at American Creek
LG: 65.0cm WT: 3.5kg Sex: F

DATE	RIVER MILE	LOCATION
05/26/88	934	1 1/2 mile north of Landing Creek - east side
06/15/88	934	1 1/2 mile north of Landing Creek - mid river
07/08/88	934	2 miles north of Landing Creek - east shore
07/21/88	934	2 miles north of Landing Creek - east shore
08/04/88	935	1 mile north of Landing Creek - 200 yds off east shore
08/18/88	935	1 mile north of Landing Creek - 200 yds off east shore
09/02/88	935	1 mile north of Landing Creek - dead (?)
09/27/88	935	1 mile north of Landing Creek
05/23/89	935	1 mile north of Landing Creek
06/01/89	935	1 mile north of Landing Creek
07/24/89	935	1 mile north of Landing Creek
08/21/89	935	1 mile north of Landing Creek
06/08/90	935	1 mile north of Landing Creek

TAG NO:1265

Released on 04-13-88 at American Creek
LG: 72.2cm WT: 4.0kg Sex: F

DATE	RIVER MILE	LOCATION
04/18/88	968	St. Joe's Indian School
04/27/88	968	St. Joe's Indian School
05/04/88	968	200 yds offshore 1/4 mile south of West Park Cmpgrd
05/10/88	968	200 yds south of West Park boat ramp
05/16/88	954	Bull Creek
06/22/88	948	1/2 mile north of Boyer boat ramp
06/27/88	932	1 mile across from Landing Creek, 150 yds off east side
07/08/88	943	3 miles south of Boyer, east shore
07/21/88	947	1/4 mile south of Boyer, east shore
08/15/88	942	2 miles north of Elm Creek, mid reservoir in trees
07/03/89	948	1 mile north of Boyer boat ramp
07/27/89	947	straight out from Boyer boat ramp
10/12/89	967	west end of Hwy 16 bridge
06/11/90	967	west end of Hwy 16 bridge - dead (?)

TAG NO:22423

Released on 10-06-88 at American Creek
LG: 71.0cm WT: 3.7kg Sex: F

DATE	RIVER MILE	LOCATION
10/11/88	968	150 yds offshore American Creek Cmpgrd
11/02/88	968	mid lake, out from American Creek Cmpgrd
05/17/89	965	straight out from Oacoma
05/31/89	965	straight out from Oacoma
08/08/89	965	straight out from Oacoma, 16 ft
08/22/89	965	straight out from Oacoma, 16 ft (dead ?)

TAG NO:294

Released on 04-20-89 at American Creek
LG: 56.0cm WT: 1.7kg Sex: F

DATE	RIVER MILE	LOCATION
05/23/89	927	1 mile north of Red Rock
06/22/89	925	1 1/2 miles south of Turgeon Well, east side, 21 ft
08/01/89	909	3 miles south of Platte Creek, 200 yds off west side, 80ft
08/15/89	912	out from Platte Creek, mid river, 70 ft

TAG NO:348

Released on 04-20-89 at American Creek
LG: 62.5cm WT: 2.6kg Sex: F

DATE	RIVER MILE	LOCATION
05/23/89	927	1/2 mile north of Turgeon Well
06/22/89	926	Turgeon Well, mid river, 56 ft
07/06/89	926	Turgeon Well, 45 ft
07/24/89	927	1/2 mile north of Turgeon Well, 15 ft
08/21/89	927	1/2 mile north of Turgeon Well, 12 ft

TAG NO:357

Released on 04-13-88 at American Creek
LG: 56.0cm WT: 1.6kg Sex: F

DATE	RIVER MILE	LOCATION
04/18/88	968	100 yds north, offshore of West Park boat ramp
04/27/88	968	200 yds north, offshore of West Park boat ramp
05/04/88	968	1/4 mile north, offshore of West Park boat ramp
06/06/88	881	caught by angler near Ft.Randall Dam

TAG NO:366

Released on 04-20-89 at American Creek
LG: 55.5cm WT: 1.8kg Sex: F

DATE	RIVER MILE	LOCATION
07/03/89	963	south of Oacoma, near mouth of Am. Crow Crk, 4 ft
07/19/89	962	1/2 mile north of Dude Ranch, 200 yds offshore, 22 ft
08/08/89	966	east side I-90 bridge, 3 ft
08/12/89	967	caught by angler, Chamberlain

TAG NO:375

Released on 04-20-89 at American Creek
LG: 57.0cm WT: 1.7kg Sex: F

DATE	RIVER MILE	LOCATION
05/17/89	965	1/2 mile south of RR bridge
05/31/89	965	1/2 mile south of RR bridge
06/19/89	965	1/2 mile south of RR bridge, 20 ft
07/03/89	965	1/2 mile south of RR bridge, 20 ft
07/19/89	965	1/2 mile south of RR bridge, 20 ft
08/08/89	965	1/2 mile south of RR bridge, 20 ft
08/22/89	965	1/2 mile south of RR bridge, 20 ft
09/19/89	965	1/2 mile south of RR bridge, 20 ft (dead ?)
06/11/90	965	1/2 mile south of RR bridge, 20 ft

TAG NO:447

Released on 04-20-89 at American Creek
LG: 62.5cm WT: 2.6kg Sex: F

DATE	RIVER MILE	LOCATION
05/20/89	922	caught by angler, 1/2 mile north of Snake Creek

TAG NO:2228

Released on 04-21-89 at American Creek
LG: 63.5cm WT: 2.3kg Sex: F

DATE	RIVER MILE	LOCATION
05/22/89	941	1 mile north of Elm Creek
05/23/89	941	1/2 mile north of Elm Creek, east side
06/20/89	892	upper end of Pease Creek, 8 ft
06/26/89	892	upper end of Pease Creek, 8 ft
07/26/89	892	upper end of Pease Creek, 4 ft
08/03/89	892	upper end of Pease Creek, 4 ft
08/10/89	892	upper end of Pease Creek, 3 ft

TAG NO:2237

Released on 04-20-89 at American Creek
LG: 66.3cm WT: 2.5kg Sex: F

DATE	RIVER MILE	LOCATION
05/23/89	926	Red Rock
06/01/89	927	1 mile north of Red Rock
06/22/89	927	1 mile north of Red Rock, 56 ft
07/06/89	927	1 mile north of Red Rock, 55 ft
07/24/89	926	Red Rock, 55 ft
08/21/89	927	1 mile north of Red Rock, 49 ft
06/14/90	918	4 miles south of Hwy 44 bridge, west side, 20 ft

TAG NO:2246

Released on 04-21-89 at American Creek
LG: 48.0cm WT: 1.2kg Sex: F

DATE	RIVER MILE	LOCATION
05/23/89	923	out from Buryanek Bay
08/05/89		caught by angler

TAG NO:2255

Released on 04-20-89 at American Creek
LG: 51.0cm WT: 1.6kg Sex: F

DATE	RIVER MILE	LOCATION
07/26/89	892	1/2 mile north of Pease Creek, east side, 87 ft
08/03/89	892	1/2 mile north of Pease Creek, east side, 87 ft
08/10/89	892	1/2 mile north of Pease Creek, east side, 83 ft
01/05/90		caught by angler, Chamberlain

TAG NO:2264

Released on 04-20-89 at American Creek
LG: 52.0cm WT: 1.3kg Sex: M

DATE	RIVER MILE	LOCATION
05/23/89	925	1 mile south of Turgeon Wells
06/15/89	910	1.5 miles south of Cedar Creek, east side, 90 ft
08/15/89	911	1 mile south of Platte Creek
06/14/90	912	1/2 mile up into Platte Creek, 60 ft

TAG NO:2273

Released on 04-20-89 at American Creek
LG: 52.0cm WT: 1.4kg Sex: F

DATE	RIVER MILE	LOCATION
05/23/89	926	straight out from Turgeon Well
07/26/89	889	1 mile south of Scalp Creek, westside, 60 ft

TAG NO:2327

Released on 04-20-89 at American Creek
LG: 56.0cm WT: 2.1kg Sex: F

DATE	RIVER MILE	LOCATION
08/15/89	918	3 1/2 miles south of Hwy 44 bridge, mid channel, 70 ft
06/14/90	915	1 mile south of 5 Mile Creek, west side, 25 ft
07/05/90	909	2 miles north of Cedar Creek, 70 ft

TAG NO:2336

Released on 04-20-89 at American Creek
LG: 52.5cm WT: 1.4kg Sex: F

DATE	RIVER MILE	LOCATION
05/17/89	948	1 mile north of Boyer
05/23/89	922	1 mile north of Hwy 44 bridge
06/15/89	909	2 miles south of Cedar Creek, east side, 73 ft
06/29/89	912	in upper end of Platte Creek, 30 ft
07/18/89	912	Platte Creek channel, 25 ft
08/01/89	912	Platte Creek, 47 ft
08/15/89	912	mid way up Platte Creek, 40 ft
10/15/89	891	caught by angler, 1st large bay south of Pease Creek

TAG NO:22225

Released on 04-21-89 at American Creek
LG: 50.5cm WT: 1.2kg Sex: F

DATE	RIVER MILE	LOCATION
05/17/89	955	1/2 mile south of White River, east side

TAG NO:22234

Released on 04-26-89 at American Creek
LG: 62.0cm WT: 2.4kg Sex: F

DATE	RIVER MILE	LOCATION
		(formerly tag no: 456)
05/17/89	967	over well in American Creek Bay
07/06/89	923	straight out from Buryanek, 65 ft
07/24/89	925	1/2 mile south of Turgeon Well, 52 ft
08/21/89	924	2 miles south of Turgeon Well, 60 ft
09/16/89	921	caught by angler, 300 yds north of Hwy 44 bridge, 62 ft

TAG NO:22243

Released on 04-20-89 at American Creek
LG: 63.0cm WT: 2.3kg Sex: F

DATE	RIVER MILE	LOCATION
05/31/89	965	1/2 mile north of Oacoma, east side
07/03/89	965	1 mile north of Burning Brule, east side, 14 ft (dead ?)
07/19/89	965	1 mile north of Burning Brule, east side, 10 ft
08/08/89	965	1 mile north of Burning Brule, east side, 8 ft
08/22/89	965	1 mile north of Burning Brule, east side, 8 ft

TAG NO:22324

Released on 04-21-89 at American Creek
LG: 50.5cm WT: 1.4kg Sex: F

DATE	RIVER MILE	LOCATION
06/26/89	885	across from White Swan, 100 ft
07/27/89	885	across from White Swan, 100 ft
08/25/89	881	South Shore, 40 ft
10/ /89	879	caught by angler, below Ft. Randall Dam

TAG NO:22333

Released on 04-21-89 at American Creek
LG: 51.5cm WT: 1.4kg Sex: F

DATE	RIVER MILE	LOCATION
05/31/89	965	1 mile south of railroad bridge, Chamberlain, east side
06/ /89		caught by angler, north of Chamberlain

TAG NO:23233

Released on 04-21-89 at American Creek

LG: 55.5cm WT: 1.6kg Sex: F

DATE	RIVER MILE	LOCATION

no contact ever made

TAG NO:2525

Released on 04-22-87 in the Ft. Randall Tailwaters boat basin

LG: 55.0cm WT: kg Sex: F

DATE	RIVER MILE	LOCATION
04/28/87	879.5	boat ramp bay

TAG NO:2534

Released on 04-21-87 in the Ft. Randall Tailwaters boat basin

LG: 51.0cm WT: kg Sex: M

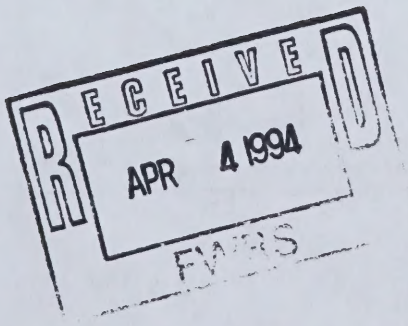
DATE	RIVER MILE	LOCATION
05/05/87	879.5	stilling basin
06/ /87	874.0	caught by angler

TAG NO:3335

Released on 04-21-87 in the Ft. Randall Tailwaters boat basin

LG: 50.0cm WT:1.6kg Sex: F

DATE	RIVER MILE	LOCATION
		no contact ever made



Appendix C. Relocation records of walleyes implanted with sonic transmitters in the Missouri River below Ft. Randall Dam.

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TAG NO:249

Released on 04-22-87 in the Ft. Randall Tailwaters boat basin
LG: 59.0cm WT: kg Sex: F

DATE	RIVER MILE	LOCATION
04/28/87	879.5	tailrace
04/29/87	878.8	main channel

TAG NO:258

Released on 04-21-87 in the Ft. Randall Tailwaters boat basin
LG: 77.8cm WT: 5.9kg Sex: F

DATE	RIVER MILE	LOCATION
04/26/87	879.7	stilling basin
04/29/87	879.5	stilling basin
05/05/87	879.5	boat ramp bay
05/19/87	879.7	stilling basin
05/27/87	877.0	main channel
05/28/87	876.8	main channel
06/15/87	879.5	boat ramp bay
06/16/87	879.5	boat ramp bay
06/17/87		caught by angler

TAG NO:267

Released on 04-22-87 in the Ft. Randall Tailwaters boat basin
LG: 54.0cm WT: kg Sex: F

DATE	RIVER MILE	LOCATION
04/28/87	879.5	tailrace
04/29/87	878.8	boat ramp bay
05/05/87	878.0	main channel
05/19/87	876.5	main channel
05/27/87	876.5	main channel
09/30/87	879.7	tailrace
10/08/87	879.5	tailrace
11/19/87	877.5	main channel